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MASSACHUSETTS BASIC-DATA REPORT NO. 8
GROUND-WATER SERIES

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ASSABET RIVER BASIN

By

SAMUEL J. POLLOCK AND WILLIAM B. FLECK

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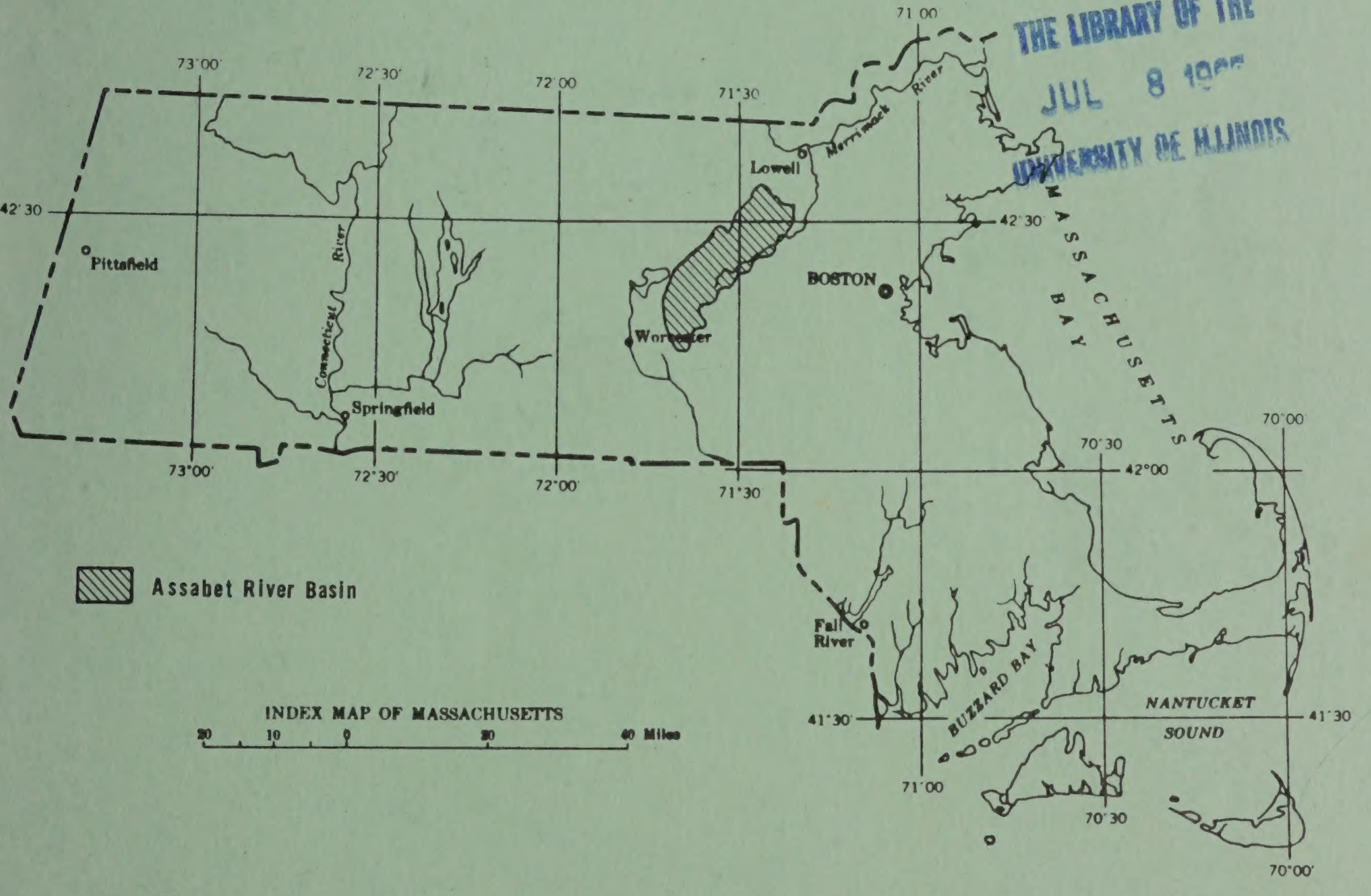

PREPARED IN COOPERATION WITH

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WATER RESOURCES COMMISSION

1964

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Geological Survey

MASSACHUSETTS BASIC-DATA REPORT NO. 8
GROUND-WATER SERIES

ASSABET RIVER BASIN

Records of wells and test holes, materials tests, and chemical analyses of water in the Assabet River basin, Massachusetts

By

Samuel J. Pollock and William B. Fleck

Prepared in cooperation with

THE COMMONWEALTH OF MASSACHUSETTS, WATER RESOURCES COMMISSION

Boston, Massachusetts

1964

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INTRODUCTION

The Assabet River, located in Worcester and Middlesex Counties in eastern Massachusetts, drains an area of approximately 177 square miles. The area includes all or a portion of the following towns: Acton, Boxborough, Carlisle, Concord, Hudson, Littleton, Marlborough, Maynard, Stow, Sudbury, and Westford in Middlesex County; Berlin, Bolton, Boylston, Clinton, Grafton, Harvard, Northborough, Shrewsbury, and Westborough in Worcester County (see plate 1 in pocket).

This report presents data collected as part of an investigation of the ground-water resources in the Assabet River basin by the U.S. Geological Survey in cooperation with the Massachusetts Water Resources Commission. The data have been prepared for release in order to make available to the public basic ground-water data that will be useful in the planning of water-resources development.

The data in this report were collected intermittently from 1939 to 1964 by H. A. Wilde, H. L. Pree, H. N. Halberg, J. A. Baker, R. W. Macomber, W. B. Fleck, and S. J. Pollock. The selected data in tables 2, 3, 4, and 5 represent those wells, test wells, and borings that were deemed representative of any given location. Data of some one hundred wells and test wells and over one thousand bridge and roadway borings are not included in this report, but may be inspected at the U.S. Geological Survey, Ground Water Branch, 211 Congress Street, Boston, Massachusetts. Tables 6-9 include data on chemical analyses of water samples, physical and hydrologic properties of materials samples, and water-table measurements made during the years 1961 through 1964. The geologic units used in tables 2 and 3 are described in table 1.

LOCATION SYSTEM

For ease in locating wells, borings, and materials tests on the map, plate 1, a location system is used which is based on the latitude and longitude coordinates of degrees, minutes, and seconds. For example, well number Acton 34, which is located at 42°30'45" north latitude and 71°25'24" longitude, is given the location designation 423045N0712524.1. The ".1" at the end of this designation is a number assigned in the order the wells were inventoried within the area of the specified latitude and longitude.

NUMBERING SYSTEMS

Wells and test wells: These are designated by a symbol whose first term is the name of the town or city in which the well is located and whose second term is a number that is assigned in the order in which the well was inventoried within the town or city (for example: Acton 34). A separate series of numbers beginning with "1" is used within each town or city. In the tables the name of the town or city and the number are given; however, on the map, plate 1, the number only appears beside the well symbol within the designating town boundaries.

Auger borings: These are designated in the same manner as the wells with one important exception; namely, a small "a" is included before the second term (for example: Harvard a2).

Bridge borings: The Massachusetts Department of Public Works numbering system is used. The designation consists of a letter and three sets of numbers (for example: B9-18-16). The letter is the first letter of the town; the first number is that numbered town alphabetically beginning with that letter; the second number is the bridge number; and the last number is the boring number on that bridge.

Roadway borings: The roadway borings are grouped by the Massachusetts Department of Public Works contract numbers. Each boring within a group is designated by a symbol, also assigned by the Massachusetts Department of Public Works. For example, Contract #I-495-5(9)45 boring #92 is the designation of a boring along Interstate Highway 495 in Bolton, Massachusetts.

Metropolitan District Commission, Wachusett-Marlborough Tunnel, Contract 283: These borings are designated by the number assigned to them by the Metropolitan District Commission.

Table 1.--Geologic units in the Assabet River basin, Massachusetts, and their water-bearing characteristics

Geologic unit	Thickness (feet)	Character	Water-bearing characteristics
Alluvium	-	Chiefly sand and silt: contains gravel in some stream channels	Does not form a distinct water-bearing unit. Where it occurs it is included with the unit that underlies it.
Swamp deposits	0-53*	Peat and muck; some interbedded or intermixed sand and silt.	Contain large amounts of absorbed and ponded water, but may retard the movement of water between the surfaces of swamps and more permeable material underneath the swamp deposits. Not utilized as an aquifer.
Outwash	0-111*	Sand, small amounts of gravel, silt, and clay, and scattered boulders.	Yields small to moderate quantities of water to wells. Reported yields of seven wells ranged from 7 to 120 gpm. The median yield was 40 gpm. Stores large amounts of ground water and furnishes a large share of the water forming the base flow of the streams.
Ice-contact deposits	0-112*	Sand and gravel, with small amounts of silt and clay.	Yield small to moderate quantities of water to wells. Reported yields of 56 wells ranged from 3 to 120 gpm. The median yield was 43 gpm. Individual deposits may differ markedly from one another in composition, sorting, and permeability, and each must be explored to find the more permeable deposits.
Till	0-99*	Unstratified clay, silt, sand, pebbles, cobbles, and boulders.	Yields small amounts of water to wells. Because of poor sorting and a large range of particle size, permeability of till is small. Many shallow wells reportedly go dry during the summer. Till may confine water in underlying bedrock.
Bedrock	-	Chiefly igneous and metamorphic rocks.	Yields small to moderate amounts of water to wells from joints and fractures. Reported yields of 124 wells ranged from 1 to 60 gpm. Median yield was 11 gpm.

* Maximum values from drillers' logs.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts

Well no.: For explanation of well-numbering system, see text.
Location: For explanation of well-location system, see text.
Altitude of land-surface datum: Altitudes expressed in feet, tenths, and hundredths are instrumentally determined; those in whole feet are interpolated from topographic maps. Datum is mean sea level.
Type of well: Dn, driven; Dr, drilled; Du, dug; J, jetted.
Depth of well: Depths expressed in feet and tenths are measured; those in whole feet are reported.
Depth to bedrock or refusal: An "R" appended to the depth indicates the well or test hole was bottomed at refusal which may be bedrock, a boulder, a hard or cemented layer, or till.
Principal water-bearing material: For explanation of geologic units, see table 1.
Character: cl, clay; g, gravel; s, sand; st, silt; t, till.
Geologic unit: br, bedrock; icd, ice-contact deposits; ow, outwash deposits; t, till deposits.

Level: Water levels expressed in feet and tenths, or in feet, tenths, and hundredths are measured; those expressed in whole feet are reported. Depths are below land surface datum.
Use: C, commercial; D, domestic; In, industrial; Ir, irrigation; MT, materials test; N, not used (follows original use, eg. D/N); O, observation; PS, public supply; S, stock; T, test hole for water.
Type of pump/power: B, bucket or bailer; C, centrifugal (suction); J, jet; P, piston; Sb, submersible; T, turbine/ E, electric; M, manual; N, none.
Remarks: A, abandoned or destroyed; BA, bacterial analysis; CA, complete chemical analysis or PCA, partial chemical analysis in table 6; L, log in table 4; T, temperature in degrees Fahrenheit; W, record of water-level fluctuations in table 7; Y, yield in gallons per minute; dd, drawdown in feet produced by pumping at preceding rate.

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement	Use		
MIDDLESEX COUNTY															
ACTON															
1	422844N0712911.1	Town of Acton	1912	210	Dn	40.0	2½	40.0R	s	icd	-	-	PS	-	L. Y 65. Wells 1-3, 5, 6, 7-22b are connected to one 300 gpm C/E pump.
2	422844N0712911.2	do.	1912	210	Dn	35.3	2½	35.3R	s	icd	-	-	PS	-	
3	422844N0712911.3	do.	1912	210	Dn	40.3	2½	-	s	icd	-	-	PS	-	Y 25.
4	422844N0712911.4	do.	1912	210	Dn	41.1	2½	-	s	icd	-	-	T	-	A 1912.
5	422844N0712911.5	do.	1912	210	Dn	25.4	2½	-	g	icd	-	-	PS	-	Y 65.
6	422844N0712911.6	do.	1912	210	Dn	25.8	2½	-	g	icd	-	-	PS	-	L. Y 80.
6a	422844N0712911.7	do.	1912	210	Dn	21.2	2½	-	g	icd	-	-	T	-	Y 45. A 1912.
6b	422844N0712911.8	do.	1912	210	Dn	25.1	2½	-	g	icd	-	-	T	-	A 1912.
7	422844N0712911.9	do.	1912	210	Dn	26.2	2½	-	s	icd	-	-	PS	-	Y 75.
8	422844N0712911.10	do.	1912	210	Dn	26.8	2½	-	[illegible]	icd	-	-	PS	-	Y 70.
9	422844N0712911.11	do.	1912	210	Dn	25.3	2½	-	g	icd	-	-	PS	-	Y 75.
10	422844N0712911.12	do.	1912	210	Dn	27.6	2½	-	g	icd	-	-	PS	-	Y 80.
11	422844N0712911.13	do.	1912	210	Dn	33.0	2½	-	g	icd	-	-	PS	-	Y 80.
12	422844N0712911.14	do.	1912	210	Dn	21.3	2½	-	g	icd	-	-	PS	-	Y 65.
13	422844N0712911.15	do.	1912	210	Dn	30.8	2½	-	g	icd	-	-	PS	-	Y 70.
14	422844N0712911.16	do.	1912	210	Dn	26.2	2½	-	g	icd	-	-	PS	-	Y 70.
15	422844N0712911.17	do.	1912	210	Dn	24.3	2½	-	g	icd	-	-	PS	-	Y 90.
16	422844N0712911.18	do.	1912	210	Dn	24.9	2½	-	g	icd	-	-	PS	-	Y 70.
17	422844N0712911.19	do.	1912	210	Dn	25.1	2½	-	g	icd	-	-	PS	-	Y 70.
18	422844N0712911.20	do.	1912	210	Dn	24.1	2½	-	g	icd	-	-	PS	-	Y 70.
19	422844N0712911.21	do.	1912	210	Dn	25.3	2½	-	g	icd	-	-	PS	-	Y 60.
20	422844N0712911.22	do.	1912	210	Dn	26.5	2½	-	g	icd	-	-	PS	-	Y 60.
21	422844N0712911.23	do.	1912	210	Dn	27.4	2½	-	g	icd	-	-	PS	-	Y 60.
22	422844N0712911.24	do.	1912	210	Dn	25.2	2½	-	g	icd	-	-	PS	-	Y 60.
22a	422844N0712911.25	do.	1912	210	Dn	23.0	2½	-	g	icd	-	-	PS	-	Y 60.
22b	422844N0712911.26	do.	1912	210	Dn	26.3	2½	-	g	icd	-	-	PS	-	Y 70.
23-27	422746N0712817.1-5	do.	-	200	Dn	56	-	-	s	ow	-	-	T	-	Unsatisfactory test results; material too fine to get water.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement	Use		
ACTON (Continued)															
34	423045N0712524.1	Frank A. McCarthy	-	215	Du-Dr	114	8	-	-	br	20-24	10-24-25	D,S	-	PCA. Dairy.
35	423052N0712424.1	Harold E. Clapp	-	180	Du-Dr	54	30-6	-	-	-	-	-	-	-/E	Dug 14 ft. Drilled 40 ft.
36	422623N0712553.1	American Powder Co.	-	140	Du	12	60	-	-	ow	6	-	-	-/E	
37	422842N0712440.1	JW & GA Woodworth	-	175	Dr	72	-	-	-	br	-	-	-	-/E	
38	422716N0712549.1	American Cyanamid & Chemical Corp.	-	170	Dr	413	8	338	-	br	-	-	In	T/-	
43	422850N0712815.1	Mr. Teel	-	200	-	-	-	-	-	ow	-	-	-	-	Considerable water; bedrock near surface.
55	422650N0712615.1	C. W. Waldron	1956	220	Dr	122	6	32	-	br	20	-56	D	Sb/E	Iron content reported high; softener used.
56	422626N0712558.1	C. D. Fletcher	1958	130	Dr	30	6	-	-	icd	6	-58	In	-	Iron content reported high. Bathroom use only. Y 20.
57	422705N0712643.1	Mr. Littlefield	1956	220	Dr	129	6	50	-	br	25	-56	D	-	Y 10.
58	422703N0712640.1	S. E. Nelson	1956	230	Dr	150-160	6	85	-	br	35	-56	D	-	Y 10.
59	422651N0712611.1	C. W. Waldron	-	210	Du	7.9	26	-	t	t	1.69	1-23-63	D/N	-	A.
60	422702N0712600.1	Frank Simeone	1957	190	Dr	120	-	75	-	br	40	-57	D	J/E	Y 9.
113	422659N0712601.1	A. Krysieniel	1959	190	Dr	104	-	66	-	br	48	3- -59	D	J/E	Y 9.
114	422701N0712558.1	E. W. Berriman	1959	190	Dr	136	-	53	-	br	45	3- -59	D	J/E	Y 8.
115	422752N0712522.1	A. W. Davis, Jr.	1901?	140	Du	15.4	30	-	-	icd	12.58	8-28-61	D	N	A. Well reported never dry.
116	422824N0712915.1	Town of Acton	1958	235	Dn	25.9	2½	-	s,g	icd	1.2	1- 7-58	T	-	A. L.
117	422826N0712924.1	do.	1958	235	Dn	24.0	2½	-	s,g	icd	1.2	1- 7-58	T	-	A.
118	422806N0712543.1	do.	1958	150	Dn	39.0	2½	39R	s,g	icd	4.2	1- 9-58	T	-	A. L.
119	422747N0712548.1	do.	1958	150	Dn	27.8	2½	27.8R	s,g	icd	3.7	1-11-58	T	-	A. L.
120	422744N0712547.1	do.	1958	150	Dn	18.0	2½	-	s,g	icd	-	-	T	-	A.
121	422957N0712514.1	do.	1958	140	Dn	32	2½	-	s,g	-	4	1-16-58	T	-	A. L.
122	422838N0712907.1	do.	1958	220	Dn	26.5	2½	-	s,g	icd	5	1-18-58	T	-	A. L.
123	422953N0712515.1	do.	1958	140	Dn	27	2½	-	s,g	-	-	-	T	-	A.
124	422954N0712509.1	do.	1958	140	Dn	13.5	2½	13.5R	s,g	icd	-	-	T	-	A.
125	422837N0712921.1	do.	1958	210	Dn	44	2½	-	s,g	icd	.4	3- 7-58	T	-	A. CA. L. Y 40; dd 2.7.
126	422716N0712818.1	do.	1958	200	Dn	32	2½	-	s,cl	icd	1.6	3-15-58	T	-	A. L.
127	422843N0712918.1	do.	1958	210	Dn	31.5	2½	-	s,g	icd	1.5	3-25-58	T	-	A.
128	422845N0712916.1	do.	1958	210	Dn	35.4	2½	-	s,g	icd	0	3-27-58	T	-	A. L. Y 50; dd 3.2.
129	422847N0712914.1	do.	1958	210	Dn	38	2½	-	s,cl,g	icd	2.5	4-17-58	T	-	A. Y 8.
130	422852N0712908.1	do.	1958	205	Dn	26	2½	-	s,cl,g	ow	2.5	4-22-58	T	-	A.
131	422850N0712904.1	do.	1958	205	Dn	38	2½	-	s,g	ow	1.5	4-23-58	T	-	A.
132	422703N0712703.1	do.	1958	200	Dn	18.5	2½	-	-	t	2.0	5-12-58	T	-	A.
133	422907N0712509.1	do.	1958	135	Dn	29.5	2½	-	s,g	ow	.15	5-15-58	T	-	A. L.
134	422918N0712453.1	do.	1958	135	Dn	28	2½	-	s,g,cl	-	1.5	5-15-58	T	-	A.
135	422918N0712447.1	do.	1958	145	Dn	36.7	2½	-	s,g	-	2.5	5-17-58	T	-	A. L.
136	422735N0712537.1	do.	1958	150	Dn	13.8	2½	13.8R	-	icd	2.5	5-19-58	T	-	A.
137	422637N0712551.1	do.	1958	150	Dn	62.5	2½	-	s,g	icd	9.5	5-20-58	T	-	A. CA. L. Y 40; dd 7.1
138	422633N0712546.1	do.	1958	150	Dn	29.0	2½	-	s,cl	icd	6.5	7-17-58	T	-	A.
139	422637N0712544.1	do.	1958	160	Dn	61.8	2½	-	s,g	icd	3	7-24-58	T	-	A. CA. L. Y 60; dd 4.
140	422745N0712457.1	do.	1958	180	Dn	34.5	2½	-	s,g	icd	-	-	T	-	A.
141	422750N0712455.1	do.	1958	180	Dn	65	2½	-	s,g	icd	19	9- 9-58	T	-	A. CA. L. Y 35; dd 1.
142	422752N0712452.1	do.	1958	180	Dn	51	2½	-	s,g	icd	20	9- 9-58	T	-	A.
143	422656N0712603.1	do.	1958	190	Dn	48	2½	-	s,g	icd	-	-	T	-	A. L.
144	422807N0712449.1	do.	1963	150	Dn	40.6	2½	-	s,g	icd	4.1	8- 2-63	T	-	A. Y 15.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement	Use		
						ACTON (Continued)									
145	422807N0712449.2	Town of Acton	1963	150	Dn	40.4	$2\frac{1}{2}$	-	s,g	icd	7.8	8- 1-63	T	-	A. Y 5.
146	422807N0712449.3	do.	1963	150	Dn	40.3	$2\frac{1}{2}$	-	s,g	icd	4.6	7-25-63	T,PS	-	L. Tested at 20 gpm per foot of drawdown. Developed to 300 gpm.
147	422913N0712851.1	do.	1962	205	Dn	39.7	$2\frac{1}{2}$	39.7	cl	ow	1.8	12-27-62	T	-	A. L.
148	422913N0712851.2	do.	1962	205	Dn	18.5	$2\frac{1}{2}$	18.5	cl	ow	-	-	T	-	A.
149	422913N0712851.3	do.	1962	205	Dn	18.0	$2\frac{1}{2}$	18.0	cl	ow	-	-	T	-	A.
150	422913N0712851.4	do.	1962	205	Dn	23.5	$2\frac{1}{2}$	23.5	cl,g	ow	2.3	12-28-62	T	-	A.
151	423114N0712423.1	do.	1963	180	Dn	66.2	$2\frac{1}{2}$	66.2R	s,g	icd	7.1	7-11-63	T	-	A. L. Y 16; dd 1.6.
152	423114N0712423.2	do.	1963	180	Dn	63	$2\frac{1}{2}$	-	s,g	icd	6.5	11-29-63	T	-	A. Y 20; dd 22.
153	423114N0712423.3	do.	1963	180	Dn	59	$2\frac{1}{2}$	59R	s,g	icd	6.5	11-29-63	T	-	A. Y 18; dd 22.
154	423056N0712429.1	do.	1963	190	Dn	14	$2\frac{1}{2}$	14R	-	icd	-	-	T	-	A.
155	423124N0712430.1	do.	1962	180	Dn	47.0	$2\frac{1}{2}$	-	s,g	icd	9.0	7-31-62	T	-	A. L.
156	422810N0712442.1	do.	-	150	Dn	42	$2\frac{1}{2}$	-	s,g	icd	23.0	-	T	-	A. L.
157	422810N0712442.2	do.	-	150	Dn	50.6	$2\frac{1}{2}$	-	s	icd	-	-	T	-	A. L.
						BOXBOROUGH									
5	422832N0712952.1	Susan Coffey	1944	240	Dr	84	-	-	-	br	-	-	D	J/E	
6	422914N0712945.1	W. H. Dill	1957	220	Dr	102	6	27	-	br	8	-	D	Sb/E	Reported flow when drilled. Y >8.
7	422944N0713001.1	Stanley Kaminski	1954	270	Dr	95	6	-	-	br	9	-54	D	J/E	Y >16.
8	422905N0713055.1	Earle Graves	1953	300	Dr	81	6	<10	-	br	6	-53	D	J/E	Y 9.
11	422835N0713046.1	George Doyle	1961	280	Dr	96	6	70	-	br	15	-61	D	J/E	Y 9-11.
12	422952N0713014.1	Mr. Rundlett	1957	290	Dr	98	90	-	-	br	-	-	D	-	Y 15.
13	422803N0713243.1	Mr. Erkkinsen	1950	240	Du	15	-	-	s,g	icd	-	-	D	P/-	
14	422825N0713156.1	Bernard Joyce	1953	310	Dr	81	-	11	-	br	-	-	D	J/E	Y 11.5.
15	423004N0713127.1	George Robinson	1957	410	Dr	99	8	40	-	br	15	-57	S,D	J/E	Y 30-40.
17	422820N0712952.1	Clarence Landry	1955	260	Dr	76	6	12	-	br	18	-55	D	J/E	Y 8.
18	422838N0712940.1	Mr. Schou	1945	230	Dr	46	6	21	-	br	-	-	D	J/E	Y 3-5.
19	422938N0713004.1	Mr. Harbison	1958	310	Dr	89	6	10	-	br	18	-58	D	J/E	Y 5.
20	422935N0713021.1	Stanley Kaminski II	1960	330	Dr	100	6	20	-	br	30	-60	D	-	Y 14.
21	423000N0712947.1	Albert J. Sargent	1941	270	Dr	122	-	-	-	br	15	Summer57	D	J/E	Y 5.
						CARLISLE									
20	423136N0712104.1	Mr. Hale	1932	225	Dr	94	6	20	-	br	18	7- -32	D	C/E	Y 6. Never dry.
25	423223N0712242.1	August Bundoris	1930?	210	Du	10.3	36	10.3	t	t	7.92	6-13-39	D,S	P/M	Dry in dry seasons.
27	423208N0712304.1	Andrew Sorli	1790?	205	Du	12.8	36	-	t	t	9.63	6-13-39	D	P/M	Dry once.
28	423208N0712326.1	Albert Belanger	1935	280	Dr	138.5	6	0	-	br	-	-	D,S	C/E	Never dry. Water reported hard.
29	423208N0712318.1	do.	-	245	Du	6.2	60	-	t	t	2.06	6-13-39	N	N	
41	423148N0712259.1	Steve Passes	1937	225	Du	15.4	36	-	s,g	icd	5.44	6-15-39	D,S	P/E	Never dry. W.
42	423157N0712337.1	"The Refuge"	-	215	Du	17.3	36	-	-	t	12.80	6-15-39	D	B/M	
43	423154N0712126.1	George H. Nobbs	1938	200	Du	10	30	10	-	t	5.50	6-14-39	D	P/E	Never dry.
44	423202N0712133.1	Mrs. B. P. Wikins	1790?	230	Du	19.7	48	-	-	t	13.28	6-16-39	D	P/M	Used for washing only
45	423133N0712340.1	Mrs. M. A. Detsch	1880?	205	Du	20.2	30	20.2	s,g	-	15.04	6-21-39	D	P/E	Never dry.
46	423157N0712211.1	William David Foss	-	300	Du	25.7	24	-	-	t	16.62	6-16-39	D	P/E	Dry in dry seasons.
47	423136N0712219.1	Mr. Risgn	-	290	Du	26.8	36	-	-	t	7.85	6-16-39	D,S	P/M	Bedrock outcrop 300 feet from well.
49	423104N0712224.1	Carl Andreassean	-	215	Du	16.0	36	16.0	-	t	3.17	6-19-39	S	P/E	Dry in dry seasons.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material: Character	Principal water-bearing material: Geologic unit	Water: Level	Water: Date of measurement	Water: Use	Type of pump/power	Remarks
							CARLISLE (Continued)								
50	423052N0712201.1	L. Holm	-	170	Du	10.0	36	-	-	t	5.51	6-19-39	D,S	P/E	Never dry.
51	423052N0712201.1	do.	-	185	Du	18.1	36	-	-	t	13.05	6-19-39	S	P/M	Dry in dry seasons.
52	423120N0712137.1	John Costa	1932	190	Du-Dr	97	48-6	12.8	-	br	9.72	6-19-39	D,S	-/E	Never dry. Dug 12.8'.
53	423130N0712116.1	W. D. Wilson	1933	195	Dr	100	6	5	-	br	12	7- -33	D	C/E	Y 9; dd 28 after 3 hrs. Never dry. Water reported hard.
54	423045N0712246.1	George Cann	1927	205	Du	9.8	30	-	t	t	3.84	6-19-39	D	P/M	Bedrock outcrop 250' from well. Dry in very dry seasons.
55	423029N0712302.1	Mrs. William Koford	1840?	185	Du	12.7	30	12.7	t	t	10.44	6-19-39	D	P/M	Dry in dry seasons.
56	423039N0712314.1	C. W. Farnsworth	1937	215	Dr	72	6	-	-	br	-	-	N	N	
57	423106N0712329.1	C. G. Schirmer	1935	270	Dr	100	6	-	-	br	-	-	D	P/E	Y 7. Never dry. Iron content reported high.
58	423038N0712204.1	R. E. Ransom	1790?	165	Du	17.5	36	-	s,g	icd	11.60	6-21-39	D	P/E	Dry in very dry seasons. Water reported hard.
59	423020N0712214.1	Mrs. Fred Winsor	1929	175	Dr	115	6	15	-	br	-	-	D	P/E	Never dry. Water reported hard.
60	423042N0712127.1	T. Fulton	1935	230	Du	16.1	36	16.1	-	t	11.93	6-21-39	D	P/M	Dry in dry seasons.
61	423020N0712121.1	Casper Nelson	1911	270	Du	22.2	48	22.2	-	t	13.56	6-21-39	D	P/M	Do.
63	423102N0712111.1	Edward S. Ricker	1936	180	Du	12.2	48	-	-	t	6.29	6-21-39	D	B/M	Never dry.
83	423055N0712212.1	Lawrence K. Lunt	1932	190	Dr	392	6	10	-	br	5	12- -32	D,S	C/E	Y 12; dd 145 Water at 378 feet.
							CONCORD								
52	422728N0712440.1	Arthur Wood	1929	155	Du-Dn	40	60	-	s,g,cl	icd	18	-29	D	J/E	Y 7; dd 0 after 9 hrs. Never dry.
54	422729N0712440.1	Charles Goddard	1941?	180	Du	20	18	-	s	icd	17.6	8-23-61	D	P/E	Dry in dry seasons.
55	422725N0712441.1	Richard L. Pickel	-	170	Dn	20	$1\frac{1}{2}$	-	s,g	icd	10	8-22-61	D	P/E	Y 25; dd 0 after $\frac{1}{2}$ hr.
57	422727N0712448.1	Charles Gubbins	1954	200	Dn	39	$1\frac{1}{2}$	-	s,g	icd	-	-	D	J/E	Never dry.
58	422729N0712443.1	Mr. O'Connell	1910	190	Du	22.5	30	-	s	icd	18.50	8-21-61	D	P/M	Dry in dry seasons. Can be pumped dry.
59	422731N0712446.1	Pat Melisi	1936	190	Dr	96	6	60	-	br	60	-36	D/N	J/E	
60	422733N0712449.1	J. B. Bartolomeo	1951	190	Dr	177	8	73	-	br	56	2- -51	D	J/E	L. Never dry.
61	422732N0712452.1	Daniel E. Thibeault	1956	190	Dr	171	6	52	-	br	50	-56	D	J/E	Y 26. Hard water and high iron reported.
62	422733N0712452.1	F. H. Gibson	1951	190	Dn	55	$1\frac{1}{2}$	55	s,g	icd	-	-	D/N	P/E	
63	422734N0712453.1	S. J. Richards	1936	190	Dn	70	$1\frac{1}{4}$	-	s	icd	65	Summer57	D	J/E	Y 3. Never dry.
64	422733N0712434.1	Walter Dickinson	1950	160	Dr	92	-	35	-	br	-	-	D/N	J/E	Y $4\frac{1}{2}$. Leaves blue stain in sink.
66	422732N0712428.1	Fred Junno	1954	130	Dr,J	87	-	42	-	br	-	-	D	J/E	Y 9-10. Never dry. High iron content.
67	422733N0712426.1	Martin W. Basch	1954	130	Dn	16.3	$1\frac{1}{4}$	-	s,g	ow	9.38	8-24-61	D,O/N	N	A. Never dry.
68	422722N0712500.1	-	1914?	170	Dr	110	8	-	-	br	42.04	8-21-61	C/N	N	Do.
71	422651N0712435.1	Alfred Dentino	1950?	140	Du	9.0	36	-	s	icd	3.95	8-29-61	Ir	P/E	Can be pumped dry at 60 gpm.
72	422653N0712435.1	do.	1920?	150	Du	25.6	60	-	s	icd	20.89	8-29-61	D/N	N	A. Dry only when pond 500' away is drained.
73	422653N0712435.1	do.	1956?	150	J	65	2	-	s	icd	18-20	-56	D	P/E	
74	422650N0712431.1	John H. Kennedy	1933	160	Du	16.7	36	-	s,g	icd	13.06	8-29-61	D	P/E	

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water		Use	Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement			
						CONCORD (Continued)									
76	422650N0712429.1	Lorenzo Ruggiero	1910?	155	Du	26.8	24	-	s	icd	24.96	8-29-61	D	J/E	Never dry.
77	422700N0712435.1	Angelo Rogers	1956	150	Dr	172	6	100?	-	br	25	-56	D	J/E	Y 8-9.
82	422656N0712415.1	R. H. LeBallister	1860?	140	Du	23	48	-	s,g	icd	20.78	8-31-61	D,S	P/E	Never dry. Water reported hard.
83	422655N0712409.1	George W. Hefty	1920	135	Du	8.9	12	-	s,g	icd	5.89	9-11-61	D	P/E	Never dry.
84	422656N0712405.1	John Caruso	1954	120	Dn	20	1¼	-	s,g	ow	8	8-31-61	D	J/E	
86	422658N0712346.1	Ray Demers	1949	130	Du	14.5	30	-	g,cl	icd	12.31	8-31-61	D	P/E	Never dry.
87	422658N0712338.1	Emil Anderson	1860	155	Du	17.1	28	17.1	s,g	icd	12.44	8-30-61	-	N	A. Dry in very dry seasons. Formerly for domestic use. W.
90	422649N0712424.1	Sam Rodgers	1962	160	Dr	100	6	60	-	br	12	-62	D	J/E	Y 15.
100	422851N0712137.1	Raymond Emerson	-	195	Du	14.5	24	-	t	t	8.7	11- 6-62	D	T/E	CA.
102	422657N0712401.1	Town of Concord	1958	120	Dn	32	-	32R	s,g,cl	icd	-	-	T	-	A. L.
103	422813N0712307.1	do.	1958	120	Dn	80	-	80R	s,g,st	ow	10.2	9- 4-58	T	-	A. L. Y 15.
104	422638N0712530.1	do.	1958	125	Dn	83	-	83R	s,g,cl	ow	-	-	T	-	A.
105	422638N0712530.2	do.	1958	125	Dn	65	-	-	s,cl,g	ow	-	-	T	-	A.
106	422638N0712530.3	do.	1958	125	Dn	98	-	98R	s,cl,g	ow	-	-	T	-	A. CA.
107	422638N0712530.4	do.	1958	125	Dn	87	-	87R	s,cl,g	ow	3.1	4- 7-58	T	-	A. L. Y 10. CA.
108	422638N0712530.5	do.	1958	125	Dn	75	-	75R	s,cl,g	ow	-	-	T	-	A.
109	422751N0712312.1	do.	1958	125	Dn	69	-	69R	s,cl,g,st	ow	-	-	T	-	A. L.
						HUDSON									
5	422310N0712950.1	A. Ordway	-	209	Du	16	24	-	s	ow	1.5	8-26-55	S	-	
9	422321N0712844.1	U.S. Army	-	197.0	Dn	8.5	1½	-	s,g	ow	8.29	9-26-55	O	-	
10	422309N0712855.1	do.	-	196.9	Dn	8	1¼	-	s	ow	10.00	9-26-55	O	-	
14	422323N0712904.1	do.	-	202.4	Dn	16.4	1¼	-	s	ow	14.20	10- 2-55	O	-	
31-34	422408N0713407.1	Town of Hudson	-	220	Dn-J	21-25.4	-	21R-25.4R	s,g	-	-	-	T	-	L.
35-38	422342N0713458.1	do.	-	260	Dn-J	17-29	-	-	cl,s,g	icd	-	-	T	-	L. Y 3 in 37 & 38. Driven to refusal.
39-40	422415N0713436.1	do.	1943	250	Dn-J	5.5-19.5	-	-	s,g,t	t	-	-	T	-	L.
41-45	422248N0713509.1	do.	-	205	Dn-J	32-56	-	-	s,g,cl	-	-	-	-	-	Y 10-15. L. No. 41 dry. Driven to refusal.
46-48	422246N0713514.1	do.	1943	205	Dn-J	39.5-58.2	-	-	s,g,cl	-	4.4	-43	T	-	Y 12; dd 2.1. Yield, drawdown, and water level are for No. 46. Driven to refusal. L.
49-50	422333N0713306.1	do.	1943	200	Dn-J	16-27.3	-	16R-27.3R	g	-	-	-	T	-	L.
52	422418N0713314.1	do.	1943	202.5	Dn-J	26.2	2½	-	s,g	-	24	-43	O	-	
53	422418N0713314.2	do.	1943	202.0	Dn-J	27.0	2½	-	s,g	-	25	-43	O	-	L.
70	422418N0713314.3	do.	1943	201.8	Dn-J	27.3	2½	-	s,g	-	17	-43	PS	-	Y 27. Nos. 70-73 & 75-79 attached to 2 C/E pumps. Hardness 20.0. Yields equal 140 gpm.
71	422418N0713314.4	do.	1943	202.0	Dn-J	26.5	2½	26.5R	s,g	-	24	-43	PS	-	Y 40. Driven to refusal.
72	422418N0713314.5	do.	1943	201.6	Dn-J	28.4	2½	28.4R	s,g	-	25	-43	PS	-	Y 30. Driven to refusal. L.
73	422418N0713314.6	do.	1943	202.2	Dn-J	29.3	2½	-	s	-	26	-43	PS	-	Y 45.
74	422418N0713314.7	do.	1943	202.3	Dn-J	23.0	2½	-	s,g	-	18	-43	PS	-	Y 16.7.
75	422418N0713314.8	do.	1943	202.2	Dn-J	23.4	2½	23.4R	s	-	22	-43	PS	-	Y 20.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material: Character	Principal water-bearing material: Geologic unit	Water: Level	Water: Date of measurement	Use	Type of pump/power	Remarks
		HUDSON (Continued)													
76	422418N0713314.9	Town of Hudson	1943	202.3	Dn-J	20.6	2½	20.6R	s,g	-	17	-43	PS	-	Y 33.
77	422418N0713314.10	do.	1943	202.4	Dn-J	20.2	2½	20.2R	s,g	-	18	-43	PS	-	Y 75.
78	422418N0713314.11	do.	1943	202.3	Dn-J	25.0	2½	25.0R	st,cl	-	22	-43	PS	-	Y 13.5
79	422418N0713314.12	do.	1943	202.5	Dn-J	20.67	2½	-	cl,s	-	4	-43	PS	-	Y 30.
80	422418N0713314.13	do.	1943	202.5	Dn-J	20.4	2½	20.4R	st	-	17	-43	O,MT	-	
82	422328N0713408.1	Hudson Theatre	1950	220	Dr	225	8	40	br	-	11	-50	C	-	Y 225; dd 0 after 8 hrs. T 46.5. Air conditioning.
83	422212N0713602.1	A. Kuster	1950	230	Du	20.2	-	20.2?	s,g	icd	18.75	7- 9-63	D	J/E	
84	422220N0713546.1	G. Rush	1932	227.6	Du	15.6	1¼	-	s,g	icd	10.6	6- 7-63	D	C/E	
85	422325N0713046.1	Roger Kane	1958	210	Dr	70	6	30-50	-	br	flow	-58	D	J/E	Y 5. Softener used.
86	422324N0713048.1	Alden Kane	1959?	210	Dr	53	6	53	g	icd	4	-59	D	Sb/E	Draws sand if pumped heavily. Y 10.
87	422325N0713046.2	Roger Kane	1951	200	Dr	115	6	40	-	br	18	-51	D,C	J/E	Y 17. Water reported hard. For garage of F.J. Kane Cement Co.
88	422329N0713041.1	F.J. Kane Cement Co.	1961	200	Dr	58	-	-	s,cl	icd	-	-	T	-	A. No water.
89	422329N0713041.2	do.	1961	200	Dr	41	-	41	s,g	icd	28	-61	T	-	A. Unsatisfactory test.
90	422333N0713152.1	William Kane	1957	280	Dr	80	6	20	-	br	15	Spring57	D,S	J/E	Y 15. Hard water and high iron reported.
91	422317N0713310.1	Lester W. Harvey	1860?	230	Du	9.7	44	-	s,g	icd	5.15	11-22-61	O	N	A. Town water used.
92	422316N0713252.1	Angelo B. DiPersio	-	240	Du	19.2	28	-	s,g	icd	12.46	11-22-61	D/N	N	A. Never dry.
93	422324N0713236.1	John M. Meserve	1866	230	Du	6.1	40	-	s	icd	3.4	11-22-61	D/N	N	Do.
94	422324N0713251.1	Mr. Kerdock?	-	230	Du	5.0	72	-	s,g	icd	2.28	11-22-61	N	N	A.
95	422338N0713222.1	Mrs. Percy Doane	1775?	220	Du	11.0	30	-	s,g	icd	8.68	11-22-61	D	N	Occasional bucket full to water plants. Town water used.
96	422400N0713252.1	Andrew Lane	-	214.5	Du	11.0	28	-	s,g	icd	8.78	12- 6-61	D/N	N	Never dry.
97	422211N0713551.1	B. Benedetti	1940	214.5	Du	8.0	-	-	s,g	icd	6.19	7- 9-63	D	C/E	Do.
		LITTLETON													
1	423050N0712720.1	R. T. Barrow	1762	320	Du	30	36	30	t	t	13	6-26-39	D	P/E	Never dry.
2	423044N0712715.1	do.	1915	340	Du	14	36	6	-	br	6.0	6-26-39	S	P/M	Do.
3	423122N0712744.1	Mr. Kimball	1800?	300	Du	22.35	48	-	t	t	9.4	6-26-39	N	N	A. Never dry.
4	423122N0712744.2	do.	1906?	320	Du	50-60	18-48	-	t	t	17	-	-	N	A. Never dry. Hard water reported.
5	423102N0712804.1	S. Frost	1850	240	Du	10.8	24	-	t	t	4.41	6-26-39	N	-	A. Never dry.
6	423102N0712804.2	do.	1800?	240	Du	20.05	48	20.1	t	t	8.09	6-26-39	D/N	N	Do.
7	423102N0712804.3	do.	1800?	240	Du	22	18-72	-	t	t	12	-	N	N	Do.
8	423110N0712802.1	do.	1890	260	Du	12-15	48	-	t	t	-	-	D	-/M	A. Dry in drought periods.
9	423258N0712758.1	William L. Flagg	1933	275	Dr	101	6	30	-	br	-	-	D	P/E	Never dry.
10	423251N0712815.1	C. B. Smith	1900?	280	Du	24.5	48	-	t	t	12.93	8- 2-39	N	B/M	Do.
11	423244N0712811.1	John Sargent	1920?	285	Du	17.8	36	-	t	t	9.77	8- 2-39	N	N	Do.
12	423245N0712800.1	Ernest Robinson	1850?	280	Du	23.7	36	-	t	t	15.32	8- 2-39	S	P/E	Never dry. Hard water reported.
13	423220N0712730.1	Henry J. Couper	-	300	Du-Dr	190	6	66	-	br	-	-	D,S	-	Never dry.
14	423218N0712723.1	Charles V. Flagg	1911	290	Dr	156	6	64	-	br	22	4- -36	D,S	-/E	Do.
15	423213N0712650.1	G. H. Dustin	-	265	Dn	10	2½	-	s,g	icd	3	-	D	P/E	Y 20. Never dry.
16	423213N0712650.2	do.	1740?	280	Du	19.0	48	-	s,g	icd	14.72	8- 2-39	D	P/M	Never dry.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material: Character	Principal water-bearing material: Geologic unit	Water: Level	Water: Date of measurement	Use	Type of pump/power	Refusal
							LITTLETON (Continued)								
17	423158N0712649.1	F. L. Selfridge	1900?	230	Du	15.7	36	-	s,g	ow	12.59	8- 2-39	D	P/E	Never dry.
18	423124N0712614.1	F. T. Hutchinson	-	220	Du	6.6	150	6.6	t	t	4.75	8- 2-39	D,S	P/E	Do.
19	423126N0712641.1	R. C. Cobb	-	240	Dr	156	6	22	-	br	8	8- -39	S	-/E	Y 2-3/4. Never dry.
20	423135N0712652.1	do.	-	230	Dr	458	6	25	-	br	10	8- -39	D,S	-/E	Y 12. Never dry. Hard water reported.
21	423135N0712652.2	do.	-	230	Dr	155	6	26	-	br	14-16	8- -39	D,S	-/E	Y 2. Dry in dry seasons.
22	423223N0712807.1	G. W. Kimball	1890?	300	Du	43.8	42	-	t	t	13.21	8- 4-39	D	P/M	Never dry.
23	423201N0712736.1	Russell Fletcher	1890?	240	Du	15.2	36	15.2	t	t	14.01	8- 4-39	D,S	P/M	Reported dry in the past.
24	423159N0712733.1	do.	-	250	Du	6.5	180	-	t	t	3.23	8- 4-39	D,S	P/E	Never dry.
25	423144N0712723.1	B. D. Chicco	-	260	Dr	64	6	37	-	br	flow	8- 4-39	D	-/E	Y 6. Never dry. Hard water reported.
26	423144N0712735.1	-	-	290	Du	18.2	36	18.2	t	t	17.37	8- 4-39	N	N	A.
27	423150N0712720.1	Mrs. J. Bowen	1939	260	Dr	102.0	6	20	-	br	9.19	8- 4-39	N	N	Y 1.5.
41	423145N0712907.1	George Brown	1850?	280	Du	8.2	36	8.2	t	t	5.54	9-25-39	N	N	Never dry.
42	423116N0712841.1	Frank Glavey	1750?	300	Du	19.0	36	-	t	t	12.36	9-25-39	N	N	Reported dry in the past.
43	423110N0712817.1	E. Shine	-	280	Du	17.0	24	-	t	t	dry	9-25-39	D	P/E	
44	423058N0712828.1	-	-	280	Du	18.8	24	-	t	t	12.41	9-25-39	N	N	A.
45	423026N0712847.1	W. O. Greenleaf	1928	340	Dr	99.0	6	15-20	-	br	-	-	D	J/E	Y 6. Never dry.
46	423018N0712846.1	Cornelius Coughlin	1853?	235	Du	18.4	42	11.9	-	br	16.38	9-25-39	N	P/M	Never dry. Hard water reported.
48	423058N0712932.1	-	-	300	Du	10.9	36	-	t	t	7.15	9-25-39	D,S	P/M	
51	423039N0713035.1	G. E. Loring	1931	355	Dr	55	6	9	-	br	-	-	D,S	J/E	Never dry.
52	423046N0713026.1	L. B. Furbuse	1931	310	Du	7.5	72x48	7.5	t	t	4.64	9-26-39	D,S	N	Do.
							MARLBOROUGH								
1	422033N0713703.1	Marlborough Water & Sewage Comm.	1954	230	Dn-J	41.0	2½	41.0R	s,g,cl	icd	8.1	5-27-54	T	-	L.
2	422036N0713700.1	do.	1954	220	Dn-J	19.0	2½	19.0R	s,g,cl	icd	1.5	5-28-54	T	-	L.
2a	422036N0713700.2	do.	1954	220	Dn-J	16.0	2½	16.0R	s,g,cl	icd	1.5	5-28-54	T	-	
2b	422036N0713700.3	do.	1954	220	Dn-J	23.0	2½	23.0R	s,g,cl	icd	1.5	5-28-54	T	-	
3	422040N0713656.1	do.	1954	220	Dn-J	26.0	2½	26.0R	s,g,cl	icd	1.5	5-28-54	T	-	L. Y 20.
4	422035N0713703.1	do.	1954	230	Dn-J	39.7	2½	39.7R	s,g,cl	icd	1.8	6- 1-54	T	-	L.
5	422054N0713659.1	do.	1954	230	Dn-J	37.5	2½	37.5R	s,g,cl	icd	7.66	6- 2-54	T	-	
6	422057N0713659.1	do.	1954	240	Dn-J	40.4	2½	40.4R	s,g,cl	icd	8.0	6- 2-54	T	-	L. Strong odor in water 34-40.4 ft.
7	422205N0713541.1	do.	1954	210	Dn-J	87.8	2½	87.8R	s,g,cl	icd	10.8	6- 3-54	T	-	L.
8	422047N0713424.1	Mr. Lizotte	-	489.3	Du	14.7	60	-	t	t	7.19	7-15-63	N	P/M	
9	422059N0713508.1	E. Smith	1850	445.3	Du	20.6	24	-	t	t	10.85	7-15-63	Ir	P/M	Never dry.
11	422137N0713528.1	Dono Beauchaine	1940?	308.6	Du	15.7	28	-	s,g	icd	12.60	7-15-63	N	-	Town water used.
12	422134N0713506.1	C. E. Hedburg	1923	303.5	Du	16.2	-	-	s,g	icd	13.45	8-13-63	Ir	P/M	Never dry. Town water used.
13	422136N0713453.1	C. I. Hudson	-	325.8	Du	-	-	-	t	t	-	-	S	-	Town water used.
14	423151N0713535.1	M. Buxton	1949	277.5	Du	7.4	24	-	s,cl	icd	4.65	7-15-63	D	C/E	Never dry.
15	422204N0713543.1	Mary Cowdrey	-	216.9	Du	11.1	-	-	s,g	icd	7.09	7- 9-63	D	C/E	Never dry. Hard water.
16	422205N0713534.1	William F. Murray	1915	215.0	Du	11.0	-	-	s,g	icd	6.79	7- 9-63	D	P/E	Dry in dry seasons.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material: Character	Principal water-bearing material: Geologic unit	Water: Level	Water: Date of measurement	Use	Type of pump/power	Refusal
		MAYNARD													
39	422418N0712723.1	U. S. Army	-	190	Dn	18.0	-	-	s,g	ow	-	-	-	-	
41	422601N0712725.1	Mrs. Fred J. Sarvela	1915?	175	Du	7.5	18	-	s	icd	6.07	8-15-61	N	N	Never dry. W.
42	422558N0712724.1	George Kansanniva, Jr	1925?	170	Du	7.5	16	-	s	icd	4.9	8-15-61	Ir	P/E	Unfit for drinking.
43	422600N0712728.1	George Kansanniva, Sr	1953	175	Du	6.9	6	-	s	icd	dry	8-17-61	N	N	A.
44	422600N0712728.2	Mrs. Lalli	1918?	165	Du	8.2	16	-	s	icd	5.9	8-17-63	D/N	N	A. Never dry.
45	422600N0712729.1	Wilbur Clark	1910?	175	Du	6.2	29	-	s	icd	3.7	8-17-61	D/N	N	Do.
46	422559N0712727.1	John Aho	-	165	Du	2.5	26	-	s	icd	1.43	8-17-61	D/N	N	A. Red color.
47	422604N0712748.1	Philip A. Wilson	1775?	220	Du	9.5	28	-	s,g	icd	8.33	8-18-61	D/N	N	A. Dry in dry seasons.
48	422607N0712749.1	do.	1880?	220	Du	12.2	30	-	s,g	icd	10.0	8-18-61	Ir/N	P/M	Do.
49	422607N0712752.1	do.	1840?	230	Du	13.8	30	-	t	t	10.59	8-18-61	N	N	Do.
50	422534N0712821.1	John Paananen	1962	190	Dr	125	6	50	-	br	16	4- -62	D	Sb/E	Y 3.
51	422625N0712819.1	Town of Maynard	1959	215	Dn	27	2½	-	s,g	-	-	-	T	-	A. L.
52	422631N0712826.1	do.	1959	220	Dn	19	2½	-	s,g	t	-	-	T	-	A.
53	422625N0712812.1	do.	1959	210	Dn	19	2½	-	s,g	al	-	-	T	-	A.
54	422622N0712758.1	do.	1959	210	Dn	62.5	2½	-	s,cl	icd	-	-	T	-	A. L.
55	422559N0712607.1	do.	1959	190	Dn	30	2½	-	s,g,cl	-	-	-	T	-	A. L.
56	422553N0712611.1	do.	1959	190	Dn	31.5	2½	-	s,g	icd	-	-	T	-	A.
57	422603N0712559.1	do.	1959	180	Dn	25	2½	-	s,g,cl	-	-	-	T	-	A.
58	422546N0712612.1	do.	1959	200	Dn	17	2½	-	-	icd	-	-	T	-	A.
59	422418N0712731.1	do.	1958	180	Dn	111	2½	111R	s	ow	4.6	6-30-58	T	-	A. L.
60	422447N0712754.1	do.	1958	190	Dn	81.6	2½	-	s,cl	ow	-	-	T	-	A. L.
61	422503N0712640.1	do.	1958	200	Dn	74.4	2½	74.4R	s,g,cl	ow	4.4	7-11-58	T	-	A. L.
62	422528N0712812.1	do.	1959	180	Dn	74.7	2½	74.7R	s,g,cl	icd	-	-	T	-	A. L.
63	422524N0712721.1	do.	1959	190	Dn	23	2½	-	s,g	icd	-	-	T	-	A. L.
64	422535N0712640.1	do.	1959	190	Dn	20.5	2½	-	-	icd	-	-	T	-	A.
65	422507N0712639.1	do.	1957	200	Dn	68.5	2½	68.5R	s,cl	ow	4.1	9-20-57	T	-	A. Y 7.5.
66	422507N0712639.2	do.	1957	200	Dn	53.5	2½	53.5R	s,cl	ow	3.1	9-23-57	T	-	A. Y 5.
67	422507N0712639.3	do.	1957	200	Dn	65.0	2½	-	s,g	ow	1.4	10- 2-57	T	-	A. L. Y 70; dd 6.
68	422507N0712639.4	do.	1957	200	Dn	53.9	2½	53.9R	s,g	ow	2.3	9-27-57	T	-	A. Y 47; dd 3.3.
		STOW													
1	422335N0712907.1	G. Bruen	-	200.6	Dn	15	1¼	-	s	ow	12.60	10- 1-55	N	-	Three other shallow wells on property.
2	422339N0712854.1	U. S. Army	-	203.5	Dn	17.3	1¼	-	s	ow	13.78	9-28-55	-	-	
5	422340N0712846.1	do.	-	192	Du	3	4	-	s	ow	1.92	9-30-55	-	-	
7	422652N0712851.1	Stanley Babricka	1924?	210	Du	11.6	36	-	t	t	8.04	6- 1-62	D	P/M	CA.
8	422642N0712839.1	Paul Peterson	1961	210	Du	12	36	-	s,g	-	12	-61	D	C/E	
9	422502N0713200.1	Mr. Dyer	1955	220	Du	-	24	-	s,g	icd	-	-	D	C/E	Y 6.
10	422550N0713153.1	Norman Bonney	1961	230	J	17	-	-	s,g	icd	-	-	D	P/E	
11	422352N0713122.1	Della Richie	-	180	Du	7.9	18	-	s,g	-	2.3	6- 6-62	N	N	W.
12	422429N0713129.1	Mrs. J. M. Perkins	1835?	200	Du	10.9	60	-	t	t	2.3	6- 6-62	D	P/E	Never dry.
13	422428N0713134.1	Howard F. Gleason	1958	200	Du	9.9	3	9.9	t	t	4.7	6- 6-62	D		
14	422428N0713134.2	Dorothy H. Perkins	-	200	Du	13.6	36	-	t	t	10.9	6- 6-62	D	P/M	
15	422430N0713026.1	Mr. Witherbee	1940	265	Dr	172	8	-	-	br	-	-	D	J/E	
16	422558N0712902.1	Mr. Shoemaker	1940	210	Dr	175?	8	-	-	br	-	-	D	J/E	Y 44. Iron filter and softener used. CA.
18	422602N0712914.1	Mr. Mackie	-	220	Du	28.2	24	-	s,g	icd	22.0	6- 7-62	D	P/E	CA.
19	422559N0712918.1	Mr. Carbray	-	220	Du	35	30	-	s,g	icd	25	6- -62	D	P/E	
20	422607N0713006.1	Mr. Derby	1957	200	Dn	-	-	-	s,g	icd	-	-	D	J/E	Iron filter used.
22	422545N0713034.1	B. C. Woolley	-	210	-	35?	-	-	s,g	icd	-	-	D	P/E	High iron content.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of well	Refusal
									Character	Geologic unit	Level	Date of measurement	Use		
							STOW (Continued)								
25	422608N0713102.1	William F. Smith	1953	230	Dn	-	-	-	s,g	icd	-	-	D	J/E	
26	422505N0713122.1	H. Koford	1925?	270	Dr	97	8	15	-	br	18	6- -62	D,Ir	J/E	
27	422432N0713123.1	Mr. Doane	1961	250	Dr	130?	-	-	-	br	-	-	D	-/E	Iron filter used.
28	422436N0713129.1	W. T. Ferguson	1930	240	Dr	150	8	45	-	br	20	-30	D	J/E	
29	422434N0713128.1	Alan Ferguson	1930	230	Dr	80	8	10	-	br	-	-	D	P/E	
30	422503N0713223.1	Mr. Kunst	1959	220	Dn	27	-	-	s,g	icd	-	-	D	P/E	
31	422503N0713223.2	William G. Peter	1955	274	Dr	136	6	99	-	br	-	-	D	J/E	Y 3½.
32	422616N0713042.1	R. W. Herrick	1960	240	Dr	90	6	27	-	br	15	-60	D	-	Y 5.
33	422654N0713059.1	F. Hewett	1954	300	Du	22.1	30	-	t	t	12.6	6-11-62	D	P/E	
34	422743N0713200.1	Mr. Lawrence	1951	320	Dr	104	6	8	-	br	25	-51	S	J/E	Y 20. Turkey farm. Iron content reported high. T 42 6-11-62.
36	422554N0713230.1	Ture Johnson	1925?	240	Du	18	84	-	s,g	icd	10-13	-62	D,S	P/E	Water reported hard.
37	422536N0712842.1	D. Hancock	1956	220	Dr	135	6	84	-	br	26	-56	D	C/E	Y 10. Iron filter used.
38	422606N0712901.1	Mr. Ketola	-	220	Dr	104	6	12	-	br	-	-	D	-	Y 10.
39	422613N0712858.1	Mr. Davis	1954	240	Dr	60	6	31	-	br	15	-54	D	P/E	
40	422624N0712855.1	Comparative Pathology Laboratory	1960	250	Dr	87	6	10	-	br	37	-60	C	J/E	C. Softener used. PCA. Y 15.
41	422613N0713229.1	K. Jennings	1960	240	Dr	85	-	-	-	br	-	-	D	J/E	Y 4-5. Softener used. Iron content reported high.
42	422547N0713026.1	William Mulligan	1959	210	Du	7.2	24	-	s,g	-	1.1	6-13-62	D	C/E	Softener used.
43	422609N0713229.1	George Lewis	1959	240	Dr	210	-	-	-	br	-	-	D	J/E	
45	422700N0713237.1	George Grasseler	1952	240	Dr	70	-	-	s,g	icd	20-25	-52	D	J/E	Y 10-12. Iron content reported high.
46	422508N0713223.1	Mr. Jameson	1961	230	Dr	132	6	80	-	br	20-30	-61	D	J/E	Y 6.
47	422513N0713037.1	Mr. Apostyl	1958	230	Dr	74	6	43	-	br	flow	-58	D	-	Y 10.
48	422701N0713040.1	Hazel Moore	1954	260	Dr	77	6	-	-	br	-	-	D	J/E	Y 3?
49	422740N0713037.1	Harvey Trefry	1955	260	Du	7	48	7	t	t	-	-	D	J/E	
50	422528N0712833.1	Mr. Kunelius	1947	180	Dn	20	-	-	s,g	icd	-	-	D	J/E	Iron content reported high.
51	422530N0712836.1	Frank Sagar	1959	190	Dr	104	6	59	-	br	45	-59	D	J/E	Y 11. Iron content reported high.
52	422716N0712932.1	George Scraggs	1953	210	Dr	70	6	12	-	br	10	-53	D	J/E	Y 10. Softener used.
53	422540N0712844.1	James Lent, Jr.	1956	210	Dr	134	6	72	-	br	16	-	D	-	Y 10.
54	422606N0713231.1	Mr. McCormick	1959	240	Dr	106	6	57	-	br	25	-	D	J/E	Y 3.
55	422550N0713012.1	C. D. Fletcher	1958	210	Dr	85	6	42	-	br	17	-58	D	J/E	Y 4. Iron content reported high. Hard water.
56	422552N0713012.1	do.	1762	190	Du	20	36	-	s,g	icd	15	-62	D	P/E	
57	422556N0713015.1	do.	-	190	Du	20	36	-	s,g	-	15	-62	D		
58	422609N0713233.1	Peter Oskirko	1956	250	Dr	50	6	-	g	icd	25	-	D	J/E	Y 6.
59	422425N0713022.1	Maurice Wheeler	1957	240	Dr	185	6	95	-	br	51	-57	D	-	Y 4.
60	422444N0713022.1	J. W. Wilson	1952	200	Dr	136	6	63	-	br	30	-52	D	-	Y 5.
61	422613N0713058.1	Albert Poulson	1955	220	Dr	101	6	27	-	br	10	Summer55	D	J/E	Y 10. Hard water reported.
62	422602N0712933.1	William Chisholm	1957	210	Dr	170	6	80	-	br	40	Spring57	D	J/E	Y 10.
63	422602N0712933.2	George Anelons	1961	210	Dr	170	6	76	-	br	18	9- -61	D	J/E	Y 28? Iron content reported high.
64	422539N0713045.1	Ivan Reahill	1954	222	Dr	92	6	37	-	br	9	-54	D	-	Y 18. Iron content reported high.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water		Use	Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement			
						STOW (Continued)									
65	422539N0713049.1	Edwin Reahill	1952	222	Dr	104	6	60	-	br	-	-	D	-	Y 15. Iron content reported high.
72	422458N0713301.1	William Rawson	1850?	278	Du-Dn	25.0	30-4	-	t	t	10.84	10-25-63	D/N	-	
73	422414N0712937.1	Town of Maynard	1959	205	Dn	60.5	2½	-	s	ow	4	6-29-59	T	-	A. L.
74	422405N0712858.1	do.	1958	205	Dn	60.2	2½	-	s,cl	ow	-	-	T	-	A. L.
75	422455N0712939.1	do.	1958	190	Dn	80	2½	-	s,cl	icd	-	-	T	-	A. L.
76	422451N0713005.1	do.	1958	190	Dn	51.0	2½	-	s,g	al	4.0	Summer58	T	-	A. L.
77	422448N0713021.1	do.	1958	180	Dn	34	2½	-	s,g	-	5.1	8- -58	T	-	A. L.
78	422514N0712930.1	do.	1958	180	Dn	37	2½	-	s,g	icd	-	-	T	-	A. L.
79	422513N0712939.1	do.	1958	190	Dn	49.8	2½	-	s	icd	-	-	T	-	A. L.
80	422557N0712958.1	do.	1958	200	Dn	32.5	2½	-	s,g	icd	1.0	8-23-58	T	-	A. L. Y 35; dd 8.
81	422518N0712832.1	do.	1959	180	Dn	55	2½	-	s,cl	ow	-	-	T	-	A. L.
82	422509N0712850.1	do.	1959	180	Dn	20	2½	20R	-	al	-	-	T	-	A.
83	422544N0712851.1	do.	1959	200	Dn	37.5	2½	-	s,g	al	1.2	1-19-59	T	-	A. L. Y 59; dd 3.1.
84	422530N0712858.1	do.	1959	180	Dn	38	2½	-	s,g,cl	al	2	1-27-59	T	-	A. L.
85	422541N0712909.1	do.	1959	185	Dn	52	2½	-	s,g,cl	ow	4	2- 9-59	T	-	A. L.
86	422545N0712919.1	do.	1959	185	Dn	55.5	2½	-	s,g	al	-	-	T	-	A. L.
87	422530N0713035.1	Ivan Reahill	1956	220	Dn	27	-	-	-	icd	-	-	T	-	PCA. Aquifer at 23 ft.
88	422530N0713035.2	do.	1956	220	Dn	-	-	-	-	icd	-	-	T	-	Y 13.
89	422530N0713035.3	do.	1956	220	Dn	24	-	-	s	icd	-	-	T	-	Y 35. PCA.
90	422513N0712937.1	Town of Maynard	1962	180	Dn	58	2½	58R	s,g	icd	5	5-25-62	T	-	A. L.
91	422519N0712922.1	do.	1962	200	Dn	42	2½	-	s,g	-	7.2	5-28-62	T	-	A. L.
92	422534N0712927.1	do.	1962	190	Dn	47	2½	-	s,g	icd	3.1	5-31-62	T	-	A. L. CA. Y 45; dd 3.7.
93	422506N0713021.1	do.	1962	190	Dn	30	2½	-	s,g	-	1.8	7-10-62	T	-	A. Y 20; dd 3.8.
94	422508N0713015.1	do.	1962	200	Dn	33	2½	-	s,g	icd	6.5	7-11-62	T	-	A. L.
95	422625N0713254.1	do.	1962	250	Dn	42.5	2½	-	s,g	icd	6	7-12-62	T	-	A. L. CA. Y 50; dd 1.1.
96	422634N0713256.1	do.	1962	185	Dn	8	2½	8	-	icd	-	-	T	-	A.
97	422622N0713250.1	do.	1962	235	Dn	35	2½	-	s,g	icd	2.4	7-13-62	T	-	A. CA. Y 35.
98	422628N0713252.1	do.	1962	220	Dn	65	2½	-	s,g	icd	1	7-18-62	T	-	A. L. CA. Y 60; dd 4.7.
99	422631N0713249.1	do.	1962	220	Dn	38	2½	-	s,g	icd	7.5	7-19-62	T	-	A.
100	422725N0712924.1	do.	1962	200	Dn	9	2½	9	-	-	-	-	T	-	A.
101	422719N0712906.1	do.	1962	200	Dn	26.8	2½	-	s,g	icd	4	7-20-62	T	-	A. L.
102	422619N0712924.1	do.	1962	200	Dn	57.5	2½	-	s,g	sw	4.1	7-26-62	T	-	A. L. CA. Y 20; dd 1.8.
103	422614N0712914.1	do.	1962	210	Dn	49	2½	-	s,g	icd	5	7-27-62	T	-	A.
104	422628N0713238.1	do.	1962	220	Dn	78	2½	-	s,g	sw	4.5	7-30-62	T	-	A. L.
105	422451N0713009.1	do.	1962	180	Dn	34.5	2½	-	s,g	-	3	7-30-62	T	-	A.
106	422632N0712929.1	do.	1962	190	Dn	24.5	2½	-	s,g	sw	4.5	8- 3-62	T	-	A. L.
107	422359N0713028.1	do.	1962	190	Dn	40.6	2½	40.6R	s,g	-	3.5	8-24-62	T	-	A.
108	422355N0713032.1	do.	1962	210	Dn	13.5	2½	13.5R	s,g	-	-	-	T	-	A.
109	422401N0713036.1	do.	1962	190	Dn	33.1	2½	-	s	-	1.1	8-28-62	T	-	A. L.
110	422545N0713223.1	do.	1962	240	Dn	56	2½	56R	s	icd	2.3	9- 4-62	T	-	A. L.
111	422548N0713245.1	do.	1962	240	Dn	28	2½	28R	s,g	icd	2.1	9- 5-62	T	-	A. L.
112	422622N0713255.1	do.	1962	230	Dn	31.3	2½	31.3R	s,g	icd	1.1	9- 6-62	T	-	A.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of well	Remarks
									Character	Geologic unit	Level	Date of measurement	Use		
						SUDBURY									
151	422524N0712524.1	Mrs. John Lackenbauer	1951	230	Du	31.2	24	-	t	t	19.2	7-20-62	D	C/E	Dry in 1957.
152	422607N0712550.1	Town of Maynard	1959	175	Dn	23.5	2½	-	s,g	icd	-	-	T	-	A. L.
153	422415N0712735.1	do.	1958	190	Dn	80	-	-	s,cl	ow	-	-	T	-	A. L.
154	422557N0712552.1	do.	1959	190	Dn	47.5	2½	-	s,g	icd	.1	3-21-59	T	-	A. L.
						WESTFORD									
1	423235N0712344.1	J. Peterson	1927	220	Du	22.8	36	-	s,g	icd	12.8	1- -38	D	P/E	
2	423233N0712427.1	Mr. Hook	1938	240	Dr	60	6	16	-	br	11	10- -38	D	P/M	
3	423312N0712453.1	Almons S. Vose	1890?	240	Du	18.0	36	18	t	t	12.0	-38	S	P/M	
5	423304N0712352.1	E. P. Jarvis	1930	240	Du	28	36	-	g	icd	-	-	S,D	P/M	
6	423211N0712400.1	L. A. Frost	-	210	Du	18.28	30	-	s,g	icd	14.45	11- 5-38	D	P/M	
7	423250N0712452.1	A. A. Chandonait	-	210	Du	17.20	30	-	s	icd	14.06	11- 5-38	S,D	P/E	CA. W.
11	423233N0712632.1	Mr. Caless	-	200	Du	4.62	100	-	s,g	-	1.58	-38	S,D	P/E	
13	423344N0712555.1	F. A. Burbeck	1860	240	Du	9	84	-	s	icd	-	-	D	P/M	
14	423325N0712709.1	F. X. Morin	-	240	Dr	-	6.0	-	-	br	-	-	D	P/M	
15	423303N0712557.1	H. C. Gamage	1930	230	Du	10.80	1.5	-	s,g	icd	4.6	11- 8-38	S,D	P/E	
16	423302N0712734.1	John Kimball	1918?	235	Du	13.70	48	-	s,g	icd	9.15	-38	D,S/N	P/E	W.
19	423421N0712636.1	C. A. Alcorn	1923	325	Du	15.60	42	-	t	t	8.55	11- 8-38	S,D	P/M	
68	423258N0712502.1	Parkerville School	-	205	Du	18	48	-	s,g	icd	-	-	N	-	Unused since 1-31-34. MDPH recommended use discontinued due to high bacteria count.
69	423432N0712624.1	William McQuarrie	-	380	Du	25	48	-	t	t	10	-	-	-	
70	423302N0712755.1	Vincent Gerace	-	270	Du	25	48	-	t	t	17	-31	D	-	
						WORCESTER COUNTY									
						BERLIN									
1	422312N0713511.1	Walter Rogers	1920	310	Dr	118	6	-	-	br	70	6- -20	D,S	-/E	Y 7. 10 head cattle.
2	422329N0713612.1	William Webb and Raymond Temple	1947	360	Dr	52	6	5	-	br	10	6- -47	D	-/E	Y 30. T 51, 8-17-49. Serves 2 families in 2 homes. Very soft water reported.
3	422304N0713707.1	C. E. Cotting	-	470	Dr	240	6	-	-	br	-	-	D,S	P/E	Y 6. 2 homes, 45 head of cattle.
4	422258N0713740.1	do.	1948	320	Dr	106	6	11	-	br	12.5	-48	-	C/E	Y 20.
5	422256N0713801.1	C. E. Nutting	1941	330	Dr	97	6	12	-	br	37	5- -41	D	J/E	Y 50. Reported never dry and soft water.
6	422248N0713831.1	Herman Sawyer	1948	290	Dr	96	6	7	-	br	20	1- -48	N	T/E	Y 2½.
7	422158N0713657.1	Myron Wheeler Estate	1946	310	Dr	177.5	6	27	-	br	13.5	Fall-46	D,Ir	J/E	Y 14.T 50. 3 families. Hard water reported.
8	422228N0713827.1	Laura Barrett	1949	280	Dr	109	6	28	-	br	17	Spring49	D	P/M	Y 22-33. T 49.
9	422346N0713746.1	R. E. Andrews	1949	460	Dr	52	6	12	-	br	12	8- -49	D	J/E	Y 2½. Soft water reported.
10	422346N0713746.2	J. E. Andrews	1940	460	Dr	54	6	12	-	br	17.21	8-18-49	D	-/E	Y 4½. T 52. Reported never dry.
11	422442N0713824.1	Alfred Jacobs	-	545	Du	14.51	36	14.5	t	t	10.4	8-18-49	D,S	-	Operated by windmill. T 52. Reported never dry.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water			Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement	Use		
								BERLIN (Continued)							
12	422447N0713910.1	Henry Huentler	1946	370	Dr	33	6	-	g	-	25	Fall--46	D	-/E	Y 25. Soft water reported.
12a	422447N0713910.2	do.	1946	370	Dr	125	6	-	s	-	-	-	N	-	Y 25. A.
13	422323N0713944.1	Cyrus Bowen	-	310	Dr	69	6	8	-	br	29	8- -49	D,S	J/-	1000 chickens, 350 head of cattle. Used for cooking, no drinking. High iron content, sulphur taste reported.
14	422356N0713956.1	Joseph Schartner	-	370	Dr	63	-	-	-	br	>30	8-18-49	-	-	Y 3.
15	422257N0713942.1	Winthrop Bray	1947	370	Dr	90	6	9	-	br	30.5	8- -47	D,S	-/E	Y 3. High iron content.
16	422332N0714028.1	F. W. Hatstat	-	415	Dr	135	-	-	-	br	-	-	-	-	
26	422312N0713514.1	Mr. DeBeradinis	1961	310	Dr	219	6	112	-	br	-	-	D	J/E	Soft water. Y 5.
27	422313N0713510.1	L. Lapan	1942	300	Dr	155	8	65	-	br	-	-	D	J/E	Y 8. Soft water reported.
28	422316N0713510.1	George Nash	1954	250	Du-Dn	15	11	-	g	icd	7.18	11-15-61	D	J/E	
29	422316N0713510.2	L. Lapan	1957	250	Du	5.2	30	-	s,g	icd	4.30	11-15-61	Ir	-/G	Used for watering lawn.
30	422308N0713749.1	C. M. Field & Co.	1953	310	Dr	55	6	6	-	br	11	Fall--53	D,Ir	C/E	Y 5. Greenhouses.
31	422308N0713749.2	do.	1954	310	Dr	65	6	11	-	br	13	Spring54	D,Ir	J/E	Y 25. Greenhouses.
32	422313N0713741.1	do.	1961	380	Dr	87	6	30	-	br	26	5- -61	D	J/E	Y 6-8.
33	422314N0713525.1	Leo DeBaradinis	1961	310	Dr	219	6	108	-	br	72	-61	D	J/E	Y 5.
34	422221N0713802.1	C. H. Wheeler, Jr.	1958	290	Dr	174	6	12	-	br	22	-58	D	-	Y 14.
35	422140N0713744.1	C. Lowe	1950	270	Dr	67	6	32	-	br	-	-	D	J/E	Y 5. CA.
36	422239N0713825.1	Mr. Casson	1954	300	Dr	50	6	11	-	br	10	-54	D	-	Y 20.
								BOLTON							
6	422523N0713414.1	C. D. Fletcher	1954	420	Dr	86	6	9	-	br	-	-	D,S	-	Y 30.
7	422523N0713414.2	do.	1954	420	Dr	400	6	9	-	br	dry	-	-	-	A 1954.
8	422649N0713345.1	Mr. Tervo	1900	260	Du	15	36	-	s,g	icd	7-10	-	D	J/E	Dry in 1947 and 1957.
9	422658N0713342.1	Henry Pirkola	-	260	Dr	81	6	30	-	br	15	-	D	-	Y 7.
10	422656N0713402.1	Paul Jaaskela	1956	270	Du	9	24	-	s,g	icd	4	-56	D	-/E	
11	422648N0713459.1	Mr. Phillips	1937	350	Dr	140	6	10	-	br	40	-37	D	J/E	Y 12. Hard water reported.
12	422705N0713456.1	Harvey Zink	1950	330	Dn	30	6	-	-	-	4	-50	D,In,S	-/E	Y 5. Reported never dry.
13	422547N0713537.1	Eugene Hayes	1948	340	Du	17.3	24	-	s,g	icd	-	-	D	J/E	CA.
14	422548N0713533.1	do.	1956	350	Dr	80	6	12	-	br	20	-56	D	J/E	Y 1.
15	422621N0713358.1	E. Finlay	1820	270	Du	10-20	24	-	s,g	icd	-	-	D	-/E	Reported never dry.
16	422530N0713642.1	Thomas Chapman	1953	366	Dr	25	6	20	-	br	3	-53	D	-/E	Y 30. Hard water reported.
17	422652N0713514.1	R. Sherman	1962	360	Dr	165	6	30	-	br	10	-62	D	Sb/E	Y 4½.
21	422600N0713650.1	Warren H. Richards	1960	400	Dr	68	6	21	-	br	9	-60	D	J/E	Y 15.
22	422503N0713656.1	John Lamb	1947	340	Dr	63	10-15	10	-	br	7-12	-47	D	J/E	Y 30.
23	422511N0713658.1	Jerry E. Richards	1954	360	Dr	60	6	16	-	br	-	-	D	-	Y 8.
24	422518N0713506.1	Preno Bonazzoli	1955	330	Dr	50	6	15	-	br	12	-55	D	-	Y 6.
25	422529N0713418.1	Waldo Henry	1954	410	Dr	145	6	11	-	br	30	-54	D	J/E	Y 4. Water at 75 ft.
26	422529N0713415.1	do.	1785	410	Du	11.8	18	11.8	-	br	5.1	6-27-62	D/N	-	Well has gone dry. W.
27	422551N0713433.1	Gordon E. Slater	1950	290	Du	6	36	-	s,g	-	7.7	6-27-62	D	-/E	
28	422642N0713526.1	F. B. Burnham	1956	350	Dr	56	6	12	-	br	15	-56	D	-	Y 25.

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material		Water		Use	Type of pump/power	Remarks
									Character	Geologic unit	Level	Date of measurement			
		BOLTON (Continued)													
29	422656N0713420.1	F. Foss	1954	300	Dr	107	6	10	-	br	20	-54	D	-/E	Y 5.
30	422430N0713705.1	Walter Pryor	1957	390	Dr	81	6	13	-	br	18	-57	D	J/E	Y 6.
31	422707N0713612.1	Alton White	1957	510	Dr	71	6	24	-	br	3	-57	D	J/E	Y 5.
32	422656N0713624.1	Leon LeBlanc	1957	540	Dr	87	6	12	-	br	5	-57	D	J/E	Y 5.
33	422647N0713630.1	Mr. Taubner	1953	585	Dr	134	-	42	-	br	8	-	D	J/E	Y 10.
34	422513N0713708.1	Mr. Iannetti	1961	380	Dr	104	6	10	-	br	10	-61	D	J/E	Y 6.
35	422524N0713642.1	Harry Underwood	1950	360	Dr	66	24	37	-	br	23	-50	D	Sb/E	Y 3.
36	422510N0713633.1	Ralph Soli	1951	360	Dr	85	6	19	-	br	10	-51	D	-	Y 5.
37	422516N0713640.1	Carl Soli	1953	350	Dr	70	6	40	-	br	10	-53	D	-/E	Y 33.
38	422520N0713333.1	Mr. Fiamingo	1953	310	Dr	77	6	5	-	br	35	-53	D	J/E	Y 22.
39	422450N0713353.1	Douglas Satterlee	1961	310	Dr	97	6	14	-	br	13	-61	D	-	Y 28.
40	422505N0713350.1	M. Frechette	1957	350	Dr	92	6	8	-	br	43	-57	D	J/E	Y 8.
41	422508N0713357.1	Alice Dupree	1957	360	Dr	81	6	18	-	br	5	-57	D	P/M	Y 28.
42	422533N0713401.1	Ina Haskett	1959	470	Dr	129	6	17.5	-	br	16	-59	D	J/E	Y 2. Hard water reported.
		HARVARD													
49	422734N0713248.1	Rodney W. Smith	1957	220	Du	12	3	-	-	icd	4-6	-57	D	P/E	Y 4.
50	422735N0713322.1	Mr. Cronin	1958	300	Dr	95	6	47	-	br	20	-58	D	J/E	Y 4. Good quality reported by Nashoba Public Health Dept.
51	422727N0713325.1	E. A. Tuomi	1958	310	Dr	130	6	42	-	br	20	-58	D	J/E	
52	422840N0713510.1	Mr. Cooper	1950	550	Dr	83	6	18	-	br	25?	-50	D	-	Y 10. Iron filter used.
53	422751N0713455.1	C. W. Cambridge	1951	410	Dr	100	6	6	-	br	18	-51	D	-	Y 5.
54	422754N0713536.1	Peter Sank	1920?	480	Du	5.9	60	-	t	t	1.7	7-13-62	D	P/E	Never dry.
55	422826N0713344.1	Mr. Gabrielsen	1940?	250	Du	11.3	20	-	s,g	icd	9.3	7-13-62	D	J/E	W.
56	422908N0713315.1	Henry Hugerth	1955	310	Dr	76	6	29	-	br	23	-55	D	J/E	Y 40.
58	422947N0713330.1	John Lamont	-	390	Du	6.4	30	-	t	t	2.7	7-19-62	D	P/E	CA. Hard water reported.
59	422947N0713330.2	do.	-	420	Du	36.5	24	-	t	t	33.3	8-28-62	O	N	W.
		NORTHBOROUGH													
10	421813N0713738.1	Louis J. Brown	-	300	Du	3.0	40	-	t	t	2.16	11-16-61	D	N	A. Well is reported to go dry at times.
11	421817N0713821.1	Mr. Schofield	-	310	Dr	92	8	-	-	br	10	8- -61	D	-/E	Never dry.
18	421711N0713937.1	Milton Beatty	1953	290	Dr	90	8-6	50	-	br	-	-	D	-	Y 10.
19	421810N0713941.1	Howard Gilkerson	1955	350	Dr	83	6	15	-	br	32	1-19-55	D	J/E	Y 15. Hard water reported.
20	421815N0713959.1	Floyd Woodcock	1951	330	Dr	64	6	14	-	br	20	4-12-51	D	J/E	Y 5. Treated for hardness.
21	421818N0714023.1	J. D. Birch	1956	370	Dr	205	6	3	-	br	35	4-13-56	D	Sb/E	Y 3. Hard water reported.
22	421818N0714021.1	William Bigelow	1941	330	Dr	120	6	25	-	br	24	6-26-41	D	-	Y 25.
23	421858N0713932.1	Edward R. Kalis	1957	310	Dr	112	-	76	-	br	20	12-30-57	D	Sb/E	Y 6. Hard water reported.
24	421737N0713900.1	Mr. Tibbetts	1952	300	Dr	140	6	75	-	br	16	-52	D	Sb/E	Y 5.
25	421724N0713928.1	Edward Brodeur	1951	320	Dr	115	6	-	s,g	icd	-	-	D	J/E	Y 10. CA.
26	421850N0713930.1	L. T. Perry	1960	300	Dr	148	8	64	-	br	4.5	1- 7-60	D	J/-	

Table 2.--Records of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

Well no.	Location	Owner or user	Year completed	Altitude of land-surface datum (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Depth to bedrock or refusal (feet)	Principal water-bearing material: Character	Principal water-bearing material: Geologic unit	Water: Level	Water: Date of measurement	Use	Type of pump/power	Remarks
NORTHBOROUGH (Continued)															
27	421759N0713927.1	Donald St. Martin	1959	300	Dr	72	-	32	-	br	11.5	10-15-59	D	J/E	Softener used. Y 12.
28	422045N0713854.1	Frank K. Renhult	1949	330	Dr	78	-	13	-	br	6	4-27-49	D,S	P/E	Y 5. Water becomes hard in dry seasons.
29	422046N0713921.1	Godwin Gay	1955	400	Dr	88	-	0	-	br	14	3-15-55	D	J/E	Y 3½.
30	422025N0713915.1	Robert Denoncourt	1961	350	Dr	81	6	5	-	br	17	9- -61	D	J/E	Y 6. Soft water reported.
31	422033N0713922.1	Albert Green	1952	410	Dr	390	8	4	-	br	75	-52	D	J/E	Y 17. Used for swimming pool.
32	421921N0713953.1	Howard Shattuck	1956	390	Dr	107	6	31	-	br	12	Spring56	D	Sb/E	Y 7. Hard water reported.
33	421846N0713652.1	Northborough Land Development Co.	-	310	Du	>53.7	18	-	s,g	icd	45.1	8-16-62	D	J/E	CA. Soft water reported.
34	421846N0713702.1	do.	1962	290	Dn	35	-	-	s,g	icd	23	Spring62	D	J/E	Drinking water for workmen.
35	421858N0713751.1	Arthur S. Bostock	1948	330	Dr	116	6	18	-	br	22	8-10-48	D	J/E	Y 5.
36	421825N0713749.1	H. Dudley Darling	1957	280	Dr	75	-	12	-	br	-	-	D	J/E	Y 40. Soft water reported.
37	421838N0713809.1	Eric MacLean	1952	290	Dr	62	6	8	-	br	29	8- -52	D	J/E	Y 4. Dry in summer of 1957. Water corrosive.
38	421837N0713808.1	do.	-	285	Du	14.4	24	-	t	t	9.8	8-20-62	D,O	P/E	W. Dry in dry spells.
39	421912N0713648.1	Mr. Cole	1900?	280	Du	19.2	24	-	s,g	icd	14.2	8-20-62	D	C/E	Never dry. Softener used.
40	422037N0713836.1	William H. Dalton	1960	360	Dr	98	-	20?	-	br	-	-	D	J/E	Y 4. At 60 ft. yield is 1 gpm.
41	422006N0714034.1	R. V. Baldelli	1962	460	Dr	85	6	16	-	br	26	7- -62	D	J/E	Y 8.5. Water at 57 ft.
42	422028N0714052.1	Z. Kachen	1958	590	Dr	60	-	-	-	br	21	-58	D	J/E	Y 10. 2000 gpd used for spraying
43	421958N0713911.1	J. Maurice	1956	340	Dr	180	-	12	-	br	23.5	12-11-56	D	J/E	Y 1½.
44	421958N0713911.2	R. Bassett	1956	340	Dr	85	-	12	-	br	18	3-15-56	D	J/E	Y 6.
45	422104N0714033.1	Mr. Davidian	1949	620	Dr	153	-	10	-	br	-	-	D/N	J/E	Y 3 in 1949; less than 1 since 1957.
46	422107N0714037.1	do.	1920?	630	Du	20	-	-	t	t	-	-	D	P/E	
47	422105N0713754.1	Pimo Bonazzoli	-	270	Du	17.7	17	-	t	t	15.6	8-23-62	-	-	W. Dry in dry seasons.
48	422104N0713839.1	Mr. Wenning	1942	330	Dr	100	-	20	-	br	-	-	D	J/E	Y 8-10. MDC aqueduct construction in 1960 lowered water levels in wells 48-50.
49	422133N0713836.1	Neil MacLeod	-	350	Dr	100	-	20?	-	br	-	-	D/N	J/E	
50	422134N0713833.1	do.	-	350	Du	15.4	24	-	t	t	15.0	10- 1-62	-	P/M	W.
51	422025N0713756.1	Philip Sparrow	-	270	Du	20.0	50	-	t	t	15.2	8-24-62	S/N	P/E	Dry in dry seasons.
52	422022N0713759.1	do.	-	320	Du	9	42	-	t	t	8.0	8-24-62	D/N	-	
53	421844N0714020.1	P. Zecco	1960	320	Du-Dn	25	-	-	s,g	icd	9.5	8-24-62	D	P/E	
54	421917N0714036.1	K. G. A. Andersson	1734	350	Du	22.5	24	-	s,g	icd	14.9	8-24-62	N	N	W.
55	421944N0714006.1	Mr. Richards	1711	330	Du	17.4	24	-	s,g	ow	14.9	8-24-62	N	-	W.
56	421954N0714055.1	G. Brule	1885	430	Du	20.6	36	-	t	t	16.9	8-24-62	D	P/E	Dry in dry seasons.
57	421954N0714052.1	do.	1957	420	Dr	90	6	10	-	br	-	-	D	J/E	Y 3-4.
SHREWSBURY															
24	421849N0714125.1	A. E. Parker	1750	520	Du	7.5	24	-	t	t	4.5	8-24-62	D	P/E	Dry in dry seasons.
25	421931N0714147.1	W. T. Moore	1953	510	Dr	95	6	6	-	br	45	1-14-53	D	J/E	Y 6.

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts

Boring no.: For explanation of boring-numbering system, see text.
Location: For explanation of boring-location system, see text.
Altitude of land-surface datum: Altitudes expressed in feet and tenths are instrumentally determined, those in whole feet are interpolated from topographic maps. Datum is mean sea level.
Type of boring: A, augered; Dn, driven; Dr, drilled.
Depth to bedrock or refusal: An "R" appended to the depth indicates the boring was bottomed at refusal which may be bedrock, a boulder, a hard or cemented layer, or till.
Material: For explanation of geologic units, see table 1.
Character: cl, clay; g, gravel; s, sand; st, silt; t, till.
Geologic unit: al, alluvium; br, bedrock; icd, ice-contact deposits; ow, outwash deposits; sw, swamp deposits, t, till deposits.
Water level: In feet below land-surface datum except when preceded by a + indicating it is above land-surface datum.
NOTE: See table 5 for logs of borings listed in table 3.

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material		Water level	Remarks
								Character	Geologic unit		
MIDDLESEX COUNTY											
ACTON											
U.S. Geological Survey Auger Borings											
a1	423201N0712400.1	7-63	190	A	67.5	4½	67.5R	s,st	icd	25	
a2	423152N0712408.1	7-63	175	A	9.5	4½	9.5R	s,g	ow	5	
a3	423152N0712425.1	7-63	195	A	8.0	4½	8.0R	s,g	ow	none	
a4	423153N0712421.1	7-63	195	A	49	4½	49R	s,g	ow	25	
a5	423118N0712559.1	7-62	230	A	63	4½	63R	s,g	icd	11	
a6	423115N0712556.1	7-62	225	A	26	4½	26R	s,st,g	icd	10	
a7	422843N0712520.1	7-62	160	A	67	4½	67R	s,g	icd	12	
a8	422852N0712513.1	7-62	150	A	31	4½	31R	s,g	icd	5.6	
a9	422851N0712526.1	7-62	155	A	20	4½	20R	s,g	icd	-	
a10	422811N0712449.1	7-62	155	A	72	4½	72R	s,st	icd	17	
a11	422811N0712454.1	7-62	150	A	53	4½	53R	s,g	icd	15	
a12	422807N0712455.1	7-62	150	A	40	4½	40R	s,g	icd	15	
a13	422803N0712501.1	7-62	155	A	18	4½	18R	s,g	icd	-	
a14	422844N0712526.1	7-62	165	A	76	4½	76R	s,st,g	icd	-	
a15	422830N0712542.1	7-62	170	A	33	4½	33R	s,g	icd	12.4	
a16	422822N0712543.1	7-62	180	A	13	4½	13R	s,g	icd	11	
a17	422929N0712452.1	7-62	155	A	13	4½	13R	s	t	-	
a18	422931N0712447.1	7-62	155	A	69	4½	69R	s,g	icd	14	
Mass. Dept. Public Works Bridge Borings											
A2-1-2	422628N0712548.1	5-52	136	Dn	48.8	1	48.8R	s,g,cl	ow	-	1 of 8 borings.
A2-7-2	422750N0712524.1	-	132	Dn	20.0	-	-	s,g,cl	al	-	1 of 2 borings.
A2-13-4	422956N0712507.1	-	143	Dn	30.0	-	30.0R	s,g	icd	-	1 of 4 borings.
A2-29-1	422825N0712640.1	6-50	167	Dn	13.5	1	13.5R	s,g	sw	5.5	1 of 12 borings.
A2-35-3	422927N0712738.1	6-50	240	Dn	9.5	1	9.5R	t	t	-	1 of 13 borings.
A2-36-5	422852N0712705.1	6-50	211	Dn	8.5	1	8.5R	t	t	-	1 of 12 borings.
A2-37-6	422840N0712656.1	6-50	196	Dn	11.5	1	11.5R	t	t	-	
BOXBOROUGH											
U.S. Geological Survey Auger Borings											
a1	422838N0713033.1	7-63	235	A	43	4½	-	s,g,t	icd	15	
a2	422847N0713016.1	7-63	235	A	40.5	4½	-	s	icd	-	
a3	422821N0712935.1	7-63	235	A	21.5	4½	21.5R	s,g	icd	-	
Mass. Dept. Public Works Bridge Borings											
B18-1-3A	423002N0712833.1	1-50	227	Dn	16.0	1	16.0R	s,g	ow	3.0	1 of 11 borings.
B18-2-11	422912N0713245.1	4-58	281	Dn	21.3	2	21.3R	s,g,cl	icd	none	1 of 30 borings; trace of water at 21.3 ft.
CONCORD											
U.S. Geological Survey Auger Borings											
a1	422659N0712438.1	7-63	150	A	56	4½	56R	s,st	icd	20	
a2	422804N0712338.1	7-63	130	A	64	4½	48.5R	s,g	ow	-	
a3	422819N0712253.1	8-63	128	A	34	4½	34R	s,st,g	ow	15	
a4	422852N0712134.1	8-63	195	A	21	4½	21R	s,g,st,t	ow	-	

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts--Continued

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
CONCORD (Continued)											
Mass. Dept. Public Works Bridge Borings											
C19-7-3	422756N0712331.1	10-33	114	Dn	93.0	-	-	s	ow	1.0	1 of 4 borings.
C19-8-4	422632N0712538.1	1-58	132	Dn	93.0	1	93.0R	s,st,g,cl	ow	4.0	1 of 6 borings.
C19-18-6	422809N0712425.1	1-50	123	Dn	18.5	1	18.5R	s,g	al	3.0	1 of 14 borings.
C19-22-3	422729N0712356.1	10-33	138	Dn	20.0	-	-	s,cl	icd	6.0	1 of 9 borings.
C19-27-2C	422810N0712430.1	6-50	126	Dn	34.0	-	-	s,cl,g,st	ow	-	1 of 5 borings.
C19-19-1	422705N0712336.1	-40	115	Dn	30.5	-	-	s,g,cl	icd	2.5	1 of 4 borings.
HUDSON											
U.S. Geological Survey Auger Borings											
a1	422308N0713439.1	7-63	207	A	22	4½	22R	s,g,st	icd	7	
a2	422308N0713439.2	7-63	207	A	14	4½	14R	s,st,g	icd	-	
a3	422308N0713439.3	7-63	207	A	6.5	4½	-	s,g	icd	-	
a4	422307N0713442.1	7-63	207	A	22	4½	22R	s	icd	12	
a5	422346N0713019.1	7-63	215	A	64	4½	64R	s	ow	20	
Mass. Dept. Public Works Bridge Borings											
H25-8-3	422359N0713246.1	-	195	Dn	17.8	-	-	s,g,cl	ow	-	1 of 6 borings.
H25-16-5	422208N0713543.1	-	208	Dn	99.5	1-3/8	99.5R	st,s,cl,g	icd	0	1 of 16 borings.
H25-17-8	422217N0713549.1	-	230	Dn	25.5	1-3/8	25.5R	s,g,st,cl	icd	7.5	1 of 18 borings.
Mass. Dept. Public Works Roadway Borings											
I-495-5(9)45											
61B	422353N0713604.1	2-63	337.1	Dn	4.5	2	4.5R	t	t	none	1 of 6 borings.
I-495-5(11)42											
71	422208N0713545.1	2-63	207.2	Dn	16.5	1-3/8	-	sw,s,g	icd	0	2 of 7
76	422222N0713552.1	2-63	266.6	Dr	21.5	1-3/8	-	t	t	3.5	borings.
LITTLETON											
Mass. Dept. Public Works Bridge Borings											
L13-18-5	423102N0713007.1	1-50	248	Dn	7.5	1	7.5R	t	t	-	1 of 8 borings.
MARLBOROUGH											
Mass. Dept. Public Works Bridge Borings											
M6-7-8	422200N0713541.1	8-59	217.1	Dn	85.0	1-3/8	85.0R	s,g,st,cl	icd	8.5	1 of 16 borings.
M6-8-16	421957N0713434.1	9-59	391.9	Dn	32.0	2	32.0R	s,g	t	2	1 of 21 borings.
M6-9-10A	422028N0713432.1	10-59	441.9	Dn	15.5	2	15.5R	s,g	t	3	1 of 17 borings.
M6-10-10	422050N0713434.1	10-59	465.6	Dn	13.0	2	8.0	s	t,br	none	1 of 24 borings.
M6-12-10A	422132N0713512.1	9-59	304.8	Dn	18.0	2	18.0R	s	icd	none	1 of 25 borings.
M6-13-3	422125N0713502.1	3-63	286.1	Dn	31.5	1-3/8	-	s,g	icd	.5	1 of 4 borings.
Mass. Dept. Public Works Roadway Borings											
I-495-5(11)42											
3C	422053N0713436.1	2-63	464.7	Dr	35.3	1-3/8	27.3	s	t,br	none	3C-69 are 13 of
14	422101N0713439.1	2-63	437.4	Dn	9.5	1-3/8	9.5R	s,g	t	2.3	61 borings.
15	422116N0713440.1	2-63	431.1	Dr	17.3	1-3/8	9.3	s,g	t,br	3.2	
16	422116N0713443.1	2-63	445.6	Dr	31.6	1-3/8	23.6	s,g	t,br	6.9	
25	422112N0713448.1	2-63	402.3	Dr	28.7	1-3/8	20.7	s,g	t,br	8.7	
32	422118N0713456.1	2-63	357.5	Dr	21.4	1-3/8	13.4	s,st,g	t,br	1.8	
36	422124N0713505.1	2-63	285	Dn	16.5	1-3/8	-	s,g	icd	-	
46	422128N0713511.1	2-63	283.9	Dn	26.5	1-3/8	-	s,g,st,sw	icd	.5	
50	422135N0713517.1	2-63	336.0	Dr	28.6	1-3/8	19.6	t	t,br	10.8	
57C	422143N0713526.1	2-63	290	Dr	21.0	1-3/8	13.0	s,g,st	br,icd	.5	
62	422146N0713526.1	2-63	320.1	Dr	11.2	1-3/8	3.2	t	t,br	none	
65	422149N0713528.1	2-63	277.8	Dn	21.5	1-3/8	-	sw,s	icd	0	
69	422154N0713533.1	2-63	282.3	Dr	24.0	1-3/8	16.0	s,g	t,br	5.1	

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts--Continued

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material		Water level	Remarks
								Character	Geologic unit		
MARLBOROUGH (Continued)											
Mass. Dept. Public Works Roadway Borings (Continued)											
I-495-5(7)39											
68	422001N0713434.1	-	401.1	Dr	17.0	2	-	t	t	8	68-96 are 6 of 73 borings.
70A	422007N0713435.1	-	383.1	Dn	16.0	2	-	t	t	1.1	
72	422012N0713434.1	-	383.8	Dn	16.0	2	-	t	t	1.2	
74	422019N0713432.1	-	461.7	Dr	42.0	2	-	t	t	18	
84	422021N0713427.1	-	483.2	Dr	48.0	2	-	t	t	22	
96	422036N0713438.1	-	461.0	Dr	16.0	2	-	t	t	9	
Metropolitan District Commission Tunnel Borings											
Wachusett-Marlborough Tunnel, Contract 283											
24	421950N0713614.1	3-58	245.0	Dr	52	4	20	cl,s,g	icd,br	0	
25	421943N0713607.1	3-58	260.0	Dr	50.0	4	20	s	t,br	4.0	
26	421937N0713559.1	3-58	260.0	Dr	52.0	4	22	s	t,br	0	
27	421930N0713550.1	4-58	308.0	Dr	52.0	4	32	s,g	t,br	0	
MAYNARD											
Mass. Dept. Public Works Bridge Borings											
M10-10-1	422543N0712735.1	12-55	169.0	Dn	33.7	2	33.7R	s,g	icd	+6.7	1 of 4 borings.
M10-1-11A	422524N0712831.1	-29	173.8	Dn	17.3	-	17.3R	s,g,cl	icd	-	1 of 14 borings.
STOW											
U.S. Geological Survey Auger Borings											
a1	422744N0713112.1	7-63	265	A	15	4½	15R	s,st,cl,g	icd	-	
a2	422744N0713112.2	7-63	265	A	32	4½	32R	st,s	icd	5	
a3	422751N0713107.1	7-63	275	A	38	4½	38R	s,g	icd	5	
a4	422617N0713239.1	7-63	215	A	65	4½	65R	sw,s,g	sw	5	
a5	422606N0713229.1	7-63	242	A	5	4½	-	s,g	icd	-	
a6	422606N0713229.2	7-63	242	A	74.5	4½	74.5R	s,g	icd	48	
a7	422512N0713222.1	7-63	225	A	66	4½	66R	s,g	icd	20	
a8	422549N0712931.1	7-63	195	A	6	4½	-	s,g	ow	-	
a9	422549N0712931.2	7-63	195	A	5	4½	-	s,g	ow	none	
a10	422442N0713029.1	7-63	188	A	30	4½	30R	s,st,cl,g	icd	-	
a11	422629N0713249.1	7-62	220	A	44	4½	44R	s,g	icd	11	
Mass. Dept. Public Works Bridge Borings											
S29-1-7	422417N0713137.1	2-47	181.7	Dn	13.0	-	13.0R	s,g	t	-	1 of 23 borings.
S29-5-2	422604N0713145.1	5-52	218.5	Dn	16.0	-	16.0R	s,g	t	6	1 of 6 borings.
WESTFORD											
U.S. Geological Survey Auger Borings											
a1	423212N0712408.1	7-63	205	A	14	4½	14R	s,g	icd	11	
a2	423212N0712408.2	7-63	205	A	11	4½	11R	s,g	icd	8	
a3	423213N0712357.1	7-63	205	A	11	4½	11R	s,g	icd	7	
a4	423227N0712511.1	7-63	205	A	9	4½	9R	s,st,g	icd	none	
a5	423227N0712511.2	7-63	205	A	10	4½	10R	s,g	icd	none	
a6	423240N0712557.1	7-63	225	A	12.5	4½	12.5R	st,s,g	icd	none	
a7	423226N0712553.1	7-63	195	A	43	4½	43R	g,st,s	icd	9	
a8	423222N0712546.1	7-63	185	A	36.5	4½	36.5R	s,g,st	icd	8	
Mass. Dept. Public Works Bridge Borings											
W26-18-13	423313N0712703.1	3-59	220.7	Dn	27.5	2	27.5R	s	icd	0	1 of 17 borings.
W26-22-19	423347N0712602.1	8-58	244.5	Dn	12.0	1	-	s,cl	icd	.5	1 of 2 borings.

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts--Continued

WORCESTER COUNTY

BERLIN

Mass. Dept. Public Works Bridge Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
B9-2-3A	422237N0713848.1	6-55	245.9	Dn	35.0	1	35.0R	s,g	icd	2.0	1 of 6 borings.
B9-6-2	422138N0713633.1	-	210	Dn	47.0	-	-	s,g	icd	3.0	1 of 4 borings.
B9-12-2	422111N0713726.1	9-55	216.9	Dn	34.5	1	34.5R	s,g	icd	-	1 of 2 borings.
B9-14-1	422116N0713739.1	8-57	215	Dn	11.0	1	11.0R	s,g	icd	.5	1 of 4 borings.
B9-17-12	422343N0713626.1	8-59	362.1	Dn	21.0	2	21.0R	s,g	icd	16.0	1 of 26 borings.
B9-18-16	422345N0713626.1	-	341.1	Dn	24.5	2	24.5R	s,g	icd	.5	1 of 31 borings.
B9-19-101	422259N0713611.1	2-63	324.2	Dn	26.5	1-3/8	-	s	icd	.7	1 of 4 borings.

Mass. Dept. Public Works Roadway Borings

I-495-5(11)42

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
78	422235N0713559.1	2-63	235.0	Dn	16.1	1-3/8	16.1R	sw,s,st	sw,t	+.3	78-104 are 9 of 26 borings.
82	422239N0713558.1	2-63	308.2	Dr	12.0	1-3/8	4.0	t	t,br	-	
84	422241N0713600.1	2-63	294.7	Dn	10.0	1-3/8	-	s,g	t	3.7	
89	422245N0713606.1	2-63	378.6	Dr	20.9	1-3/8	12.9	t	t,br	none	
91	422248N0713606.1	2-63	371.3	Dr	22.2	1-3/8	14.2	t	t,br	6.3	
96C	422253N0713606.1	2-63	359.0	Dr	20.8	1-3/8	14.0	t	t,br	none	
101	422259N0713610.1	2-63	324.2	Dn	26.5	1-3/8	-	s	icd	.7	
103	422303N0713611.1	2-63	325	Dn	37.0	1-3/8	-	sw,st,s	sw	0	
104	422303N0713613.1	2-63	324.4	Dn	21.5	1-3/8	-	sw,s,g	sw,icd	.3	

I-495-5(9)45

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
2 DAM	422308N0713630.1	2-63	387.0	Dn	14.0	2	14.0R	s,st,g	t	-	2 DAM-67 are 10 of 58 borings.
3 DAM	422306N0713629.1	2-63	395	Dn	25.0	2	-	s,st,g	t	-	
2A	422311N0713620.1	2-63	382.1	Dn	13.0	2	-	t	t	none	
6B	422323N0713622.1	2-63	396.0	Dn	6.0	2	6.0R	s,st	t	none	
7	422322N0713625.1	2-63	435	Dr	13.0	2	5.0	t	t,br	7	
23	422332N0713628.1	2-63	430.6	Dr	15.2	2	7.3	s	t,br	7.3	
42	422336N0713636.1	2-63	369.2	Dn	16.0	2	-	s	icd	none	
56	422348N0713614.1	2-63	372.0	Dr	17.0	2	7.0	s,g	t,br	none	
64	422350N0713626.1	2-63	342.2	Dn	31.0	2	-	sw,s,g	sw	0	
67	422351N0713631.1	2-63	342.1	Dn	30.0	2	-	sw,s,g	sw	0	

Metropolitan District Commission Tunnel Borings

Wachusett-Marlborough Tunnel, Contract 283

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
2	422325N0714044.1	11-57	354.5	Dr	49.0	4	19	s,g	ow,br	2.8	
4	422301N0714014.1	11-57	335	Dr	322.0	4	14	s,st	t,br	-	
5	422247N0713957.1	3-58	455	Dr	32.5	4	17.5	s,g,st	t,br	4	
6	422241N0713941.1	3-58	425	Dr	34.5	4	11.0	s,g	t,br	1	
7	422229N0713931.1	4-58	363	Dr	27.5	4	.8	-	br	3	
8	422221N0713924.1	4-58	365	Dr	340.0	4	40.5	s,g	t,br	-	
9	422211N0713910.1	4-58	365	Dr	33.0	4	9	s,g,st	t,br	0	
10	422147N0713841.1	1-58	281	Dr	45.5	4	15.0	s,g	icd,br	0	

BOLTON

U.S. Geological Survey Auger Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
a1	422646N0713342.1	7-63	251	A	45	4½	45R	s,g	icd	11.5	

Mass. Dept. Public Works Bridge Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material: Character	Material: Geologic unit	Water level	Remarks
B15-2-3C	422550N0713538.1	7-59	331.9	Dn	40.0	1-3/8	40.0R	s,g	icd	6.5	1 of 29 borings.
B15-3-6	422651N0713502.1	7-59	352.4	Dn	32.5	1-3/8	27.5	s	icd,br	none	2 of 16 borings.
B15-3-11	422651N0713502.2	7-59	347.2	Dn	42.0	1-3/8	-	s,g	-	none	
B15-4-12	422458N0713621.1	7-59	359.7	Dn	7.5	2	7.5R	s,g	t	-	1 of 42 borings.
B15-5-3	422452N0713624.1	3-63	337.8	Dn	44.5	1-3/8	-	s	icd	+1	1 of 4 borings.
B15-6-2	422452N0713624.2	3-63	337.6	Dn	41.0	1-3/8	-	s	icd	+2	1 of 3 borings.
B15-7-111	422621N0713522.1	2-63	326.0	Dn	55.0	1-3/8	-	sw,st,s	sw	0	1 of 4 borings.
B15-8-37	422710N0713446.1	2-63	294.0	Dn	34.0	1-3/8	-	sw,st,s	sw	0	1 of 5 borings.

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts--Continued

BOLTON (Continued)

Mass. Dept. Public Works Roadway Borings

I-495-5(9)45

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
70	422351N0713628.1	2-63	345	Dn	43.0	2	-	sw,s,g	sw	+0.5	70-143 are 10 of 75 borings.
81	422410N0713634.1	2-63	342.0	Dn	25.0	2	-	sw,s,g	sw	-	
92	422422N0713635.1	2-63	342.6	Dn	20.0	2	-	sw,s,st	icd	+.5	
96	422431N0713634.1	2-63	345.2	Dn	16.0	2	16.0R	sw,s,g	t	+1.0	
102	422440N0713632.1	2-63	359.3	Dn	9.0	2	9.0R	s,st,g	t	none	
105	422448N0713629.1	2-63	338.7	Dn	13.0	2	-	sw,s	sw	+2.0	
108	422452N0713628.1	2-63	337.8	Dn	17.0	2	-	s,st	sw,icd	+1.0	
112	422456N0713620.1	2-63	362.4	Dr	16.5	2	8.5	s,g	t,br	none	
138	422521N0713559.1	2-63	390.7	Dr	15.0	2	7.0	s,g	t,br	8.0	
143	422535N0713549.1	2-63	351.4	Dn	6.0	2	6.0R	s,g	sw	none	

I-495-5(10)48

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
1	422537N0713546.1	-	373.9	Dr	13.0	1-3/8	5.0	t	t,br	none	1-209 are 13 of 149 borings.
2	422549N0713536.1	-	333.1	Dn	10.0	1-3/8	10.0R	s,st,g	icd	none	
11	422616N0713524.1	-	335.8	Dn	6.0	1-3/8	6.0R	s,g	icd	none	
41	422714N0713445.1	-	293.3	Dn	66.0	1-3/8	-	sw,s,g	sw	0	
46	422718N0713440.1	-	296.0	Dn	6.0	1-3/8	6.0R	t	t	.5	
102	422602N0713524.1	-	329.6	Dn	8.0	1-3/8	8.0R	s,g	icd	none	
108	422619N0713522.1	-	325.7	Dn	40.0	1-3/8	-	sw,s,g	sw	0	
113	422625N0713520.1	-	326.8	Dn	50.0	1-3/8	-	sw,s,g	sw	0	
123	422646N0713508.1	-	329.2	Dn	28.0	1-3/8	-	sw,s,g	sw	0	
127	422651N0713504.1	-	345.8	Dn	9.0	1-3/8	9.0R	s,g	icd	none	
131	422703N0713452.1	-	316.3	Dn	18.0	1-3/8	18.0R	s,g	icd	none	
133	422708N0713448.1	-	293.8	Dn	42.0	1-3/8	-	sw,st,cl,s,g	sw	0	
209	422548N0713544.1	-	330	Dn	26.0	1-3/8	-	s,g,st	sw,icd	.5	

CLINTON

Metropolitan District Commission Tunnel Borings

Wachusett-Marlborough Tunnel, Contract 283

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
3	422354N0714101.1	11-57	355	Dr	49	4	19	s	ow,br	1.8	

HARVARD

U.S. Geological Survey Auger Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
a1	422749N0713259.1	-	235	A	36.5	4½	36.5R	s,g,st	sw,icd	1	

Mass. Dept. Public Works Bridge Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
H9-20-7B	422815N0713333.1	7-59	256.3	Dn	16.5	1-3/8	11.5	s,g	t,br,icd	none	1 of 35 borings.
H9-21-5	422820N0713328.1	7-59	241.1	Dn	34 0	1-3/8	34 0R	sw,s,g	icd	.5	1 of 8 borings.

Mass. Dept. Public Works Roadway Borings

I-495-5(10)48

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
56	422729N0713424.1	-	320.5	Dn	6.0	1-3/8	6.0R	s,g	t	none	56-207 are 9 of 117 borings.
80	422759N0713349.1	-	271.7	Dn	26.0	1-3/8	26.0R	s,g	icd	11.0	
82	422803N0713344.1	-	272.2	Dn	8.0	1-3/8	8.0R	s,g,st	icd	none	
86	422809N0713337.1	-	274.4	Dn	5.0	1-3/8	5.0R	t	t	none	
161	422738N0713411.1	-	302.0	Dn	8.0	1-3/8	8.0R	t	t	4.0	
167	422741N0713407.1	-	319.9	Dn	30.0	1-3/8	-	t	t	none	
175	422746N0713402.1	-	339.5	Dr	43.0	1-3/8	35.0	t	t,br	none	
180	422749N0713357.1	-	309.3	Dr	17.0	1-3/8	9.0	t	t,br	-	
207	422818N0713323.1	-	241.3	Dn	18.0	1-3/8	18.0R	sw,s,g	sw,icd	+1.0	

NORTHBOROUGH

U.S. Geological Survey Auger Borings

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal	Material		Water level	Remarks
								Character	Geologic unit		
a1	421857N0713941.1	7-63	305	A	31	4½	31R	s,g	icd	8.3	
a2	421914N0714025.1	7-63	320	A	8	4½	8R	t	t	-	
a3	421920N0714029.1	7-63	325	A	26.5	4½	26.5R	s,g	sw	9	
a4	421739N0713851.1	7-63	305	A	87	4½	87R	s,g,t	ow	32	
a5	421755N0713925.1	7-63	305	A	30.5	4½	30.5R	s,g	ow	25	
a6	421749N0713918.1	7-63	305	A	63	4½	63R	s,g	ow	15	

Table 3.--Records of selected borings in the Assabet River basin, Massachusetts--Continued

Boring no.	Location	Date	Altitude of land-surface datum (feet)	Type of boring	Depth of boring (feet)	Diameter of boring (inches)	Depth to bedrock or refusal (feet)	Material		Water level	Remarks
								Character	Geologic unit		
NORTHBOROUGH (Continued)											
Mass. Dept. Public Works Bridge Borings											
N20-1-4A	421924N0713818.1	10-59	251.7	Dn	20.0	2	20.0R	s,g	ow	6.0	1 of 6 borings.
N20-4-4	421739N0713816.1	1-47	277.5	Dn	78.0	-	78.0R	s,cl,g	ow	7.9	1 of 9 borings.
N20-17-1	421915N0713656.1	-30	280.0	Dn	32.0	-	-	s,g	icd	7.2	1 of 2 borings.
Metropolitan District Commission Tunnel Borings											
Wachusett-Marlborough Tunnel, Contract 283											
11	422131N0713822.1	1-58	275	Dr	73.9	4	43	s,g	icd,br	11	
12	422123N0713811.1	12-57	255	Dr	45.4	4	25	s,g	icd,br	2	
Shaft B	422120N0713808.1	12-57	299.8	Dr	300.2	4	24	s,g	t,br	34.5	
13	422110N0713754.1	12-57	241.0	Dr	66.7	4	23	s,g	t,br	-	
14	422058N0713736.1	12-57	225.0	Dr	69.0	4	31.0	s,g,st	sw,br	0	
15	422055N0713735.1	1-58	228.0	Dr	100.8	4	73.4	st,s,g	ow,br	0	
15A	422054N0713735.1	-	243.0	Dr	115.6	4	84.8	st,s,cl	ow,br	15.0	
15B	422051N0713731.1	3-58	262.0	Dr	105.8	4	80.0	s,st,g	ow,br	11.5	
16	422101N0713754.1	3-58	286.0	Dr	123.3	4	97.2	s,g,st	t,br	12.0	
17	422045N0713724.1	4-58	240.0	Dr	85.0	4	61.8	s,st	icd,br	12.5	
18	422035N0713711.1	3-58	228.0	Dr	54.0	4	24.0	s,g	icd,br	1.5	
19	422029N0713705.1	1-58	223.0	Dr	86.0	4	56.0	s,st	icd,br	2.0	
20	422027N0713701.1	2-58	225.0	Dr	54.4	4	24.4	s,g	icd,br	4.0	
21	422015N0713646.1	3-58	253.0	Dr	103.2	4	31.8	s	icd,br	12.5	
22	422005N0713634.1	2-58	239	Dr	239.0	4	24.0	s,g,st	icd,br	0	
23	421958N0713625.1	2-58	243	Dr	58.5	4	28.5	cl,st,s	icd,br	1.0	
WESTBOROUGH											
U.S. Geological Survey Auger Borings											
a1	421612N0713904.1	7-63	290	A	67	$4\frac{1}{2}$	67R	s,g,cl,st,t	ow	10	
Mass. Dept. Public Works Bridge Borings											
W24-2-2	421700N0713821.1	-30	271.5	Dn	36.0	-	-	s,g	ow	+1.0	1 of 6 borings.
W27-7-6	421627N0713732.1	12-62	327.3	Dn	30.0	2	-	s	ow	21.0	1 of 7 borings.
W24-17-1	421626N0713758.1	9-55	285.4	Dn	14.0	1	-	s,g	ow	-	1 of 2 borings.
W24-18-2	421523N0713802.1	9-55	334.3	Dn	19.5	1	19.5R	s,g	icd	-	1 of 2 borings.

Table 4.--Logs of selected wells and test wells in the Assabet River basin, Massachusetts
(Thicknesses and depths below land-surface are given in feet)

	Thickness	Depth
ACTON 1. Alt. about 210 ft.		
Driller's log.		
Mud, black	10.6	10.6
Sand, fine, gray	5.5	16.1
Sand, coarse, gray	21.4	37.5
Hardpan	2.5	40.0
ACTON 6. Alt. about 210 ft.		
Driller's log.		
Mud, black	5.1	5.1
Sand, fine, gray	10.2	15.3
Gravel, brown	10.5	25.8
ACTON 116. Alt. about 235 ft.		
Driller's log.		
Fine to medium brown sand and gravel	25.5	25.5
Not reported	.4	25.9
Weight bouncing		at 25.9
ACTON 118. Alt. about 150 ft.		
Driller's log.		
Fine to medium brown sand and gravel with clay. Tight--no good	25	25
Fine brown sand and some clay. Tight--no good	6	31
Fine gray sand, some gravel. Pumped a little but on the tight side	5	36
Not reported	3	39
Refusal		at 39
ACTON 119. Alt. about 150 ft.		
Driller's log.		
Fine to medium light brown sand and gravel. Pumped good--pumped sand	21	21
Fine to medium brown sand and gravel. Pumped good--pumped sand	5.5	26.5
Not reported	1.4	27.9
Refusal		at 27.9
ACTON 121. Alt. about 140 ft.		
Driller's log.		
Sand	9	9
Medium sand	6	15
Sand, gravel	11	26
Sharp gray gravel, sand, clay	6	32
ACTON 122. Alt. about 220 ft.		
Driller's log.		
Sand, gravel	25	25
Sharp gravel, tight	1.5	26.5
ACTON 125. Alt. about 210 ft.		
Driller's log.		
Fine gray sand changing to medium brown sand. Pumped freely	21	21
Fine to medium brown sand. Pumped all sand	5	26
Fine to medium brown sand and gravel. Pumped good	5	31
Fine to medium brown sand and gravel. Pumped freely	5	36
Medium brown sand and gravel. Pumped freely. Went off rock at 37 ft. Drove hard from 40 ft. on	6	42
Not reported	2	44
Weight bouncing		at 44
ACTON 126. Alt. about 200 ft.		
Driller's log.		
Fine to medium brown sand and clay, tight	25.5	25.5
Fine to medium gray sand and broken gravel. Pumped good	6.5	32
Weight bouncing		at 32
ACTON 128. Alt. about 210 ft.		
Driller's log.		
Peat	4	4
Fine brown sand and gravel. Pumped fair--pumped sand	14	18
Medium brown sand and gravel. Pumped freely	5.5	23.5
Medium brown sand and gravel. Pumped good--pumped sand	5.5	29
Fine brown sand, some gravel and clay. Pumped all sand	5	34
Not reported	1.4	35.4
Weight bouncing		at 35.4
ACTON 133. Alt. about 135 ft.		
Driller's log.		
Medium brown sand and broken gravel changing to fine gray sand and sharp gravel. Water clayey looking. Tight	20	20
Fine to medium gray sand with sharp gravel and clay. Tight	9.5	29.5
Weight bouncing		at 29.5
ACTON 135. Alt. about 145 ft.		
Driller's log.		
Medium brown sand and broken gravel, some clay. Pumped fair--pumped sand	19	19
Fine gray sand, some small gravel. Started to pump but tightened up	5	24
Fine gray sand and broken gravel. Started to pump but tightened up	6	30
Fine to medium gray sand and gravel with some clay. Pumped but on tight side	6.7	36.7
Weight bouncing		at 36.7
ACTON 137. Alt. about 150 ft.		
Driller's log.		
Fine to medium brown sand and large gravel, some clay. Pumped fair--pumped sand. Drove hard	19	19
Fine brown sand, some clay, tight. Drove hard	23	42
Fine to medium brown sand and gravel. Pumped fair--pumped sand	4	46
Fine to medium brown sand and gravel. Pumped fair--pumped sand. Drove hard	5.5	51.5
Medium brown sand and gravel. Pumped good. Drove hard	5.5	57
Medium brown sand and gravel. Pumped good--pumped sand. Drove hard	5	62
Fine to medium gray sand sharp gravel and gray clay	2	64
ACTON 139. Alt. about 160 ft.		
Driller's log.		
Fine to medium brown sand and gravel. Pumped mostly sand	23.5	23.5
Fine to medium brown sand. Pumped mostly sand	5.5	29
Fine to medium brown sand. Started to pump but tightened	5	34
Fine brown sand, some gravel. Started to pump but tightened	6	40
Fine brown sand, some gravel and clay, tight	5	45
Fine to medium brown sand and gravel. Pumped fair. Drove hard	5	50
Fine to medium, light brown sand and gravel. Pumped fair pumped sand. Drove hard	5	55
Fine to medium brown sand and gravel. Pumped fair, pumped sand. Pipe not moving at 61.8	6.8	61.8
ACTON 141. Alt. about 180 ft.		
Driller's log.		
Gray brown sand and gravel	21	21
Sand and gravel	5	26
Brown sand and gravel	6	32
Brown sand, some gravel	5	37
Some sand and gravel	5	42
Medium sand and some gravel	6	48
Fine sand	17	65
ACTON 143. Alt. about 190 ft.		
Driller's log.		
Brown sand and gravel	20	20
Fine sand and gravel	11	31
Fine sand and some gravel	5	36
Fine sand	12	48
ACTON 146. Alt. about 150 ft.		
Driller's log.		
Fine to coarse brown sand	10	10
Fine to coarse brown sand, some small gravel	5	15
Medium to coarse brown sand and gravel, some fines	15	30
Medium to coarse brown sand and gravel, some fines and trace of clay	5	35
Medium to coarse brown sand and gravel, some fines	3	38
Medium to coarse gray-brown sand and gravel, some fines.	2.3	40.3
ACTON 147. Alt. about 205 ft.		
Driller's log.		
Gray clay	27.8	27.8
Coarse gravel, clay	5.0	32.8
Sharp gravel, broken rock,	6.9	39.7
clay	6.9	39.7
Hit ledge		at 39.7
ACTON 151. Alt. about 180 ft.		
Driller's log.		
Fine to medium brown sand and gravel with clay. Drove hard to 8 ft	18	18
Fine brown sand and gravel with clay. Tightened up	5	23
Fine to medium brown sand and gravel, some clay. Pumped fair	5	28
Fine to medium brown sand. Pumped very little	20	48
Fine to medium brown sand and gravel. Pumped mostly all sand	6	54
Fine to medium brown sand and small gravel. Specks of clay. Pumped fair	12.2	66.2
Refusal		at 66.2
ACTON 155. Alt. about 180 ft.		
Driller's log.		
Fine silty gray sand	26.9	26.9
Fine brown sand, some coarse. Pulled plug	4.9	31.8
Fine brown sand and gravel. Pumped free	5.1	36.9
Medium to fine sand; coarse sharp gravel	5.1	42.0
Fine sand and clay	5.0	47.0
ACTON 156. Alt. about 150 ft.		
Driller's log.		
Loam	1	1
Sand and gravel, sharp	25.3	26.3
Medium sand and gravel	15.7	42
ACTON 157. Alt. about 150 ft.		
Driller's log.		
Fine and medium sand	25.5	25.5
Fine sand	25.0	50.5
CONCORD 60. Alt. about 190 ft.		
Driller's log as reported by owner.		
Sand	60	60
Hard clay	13	73
Bedrock	100	173
CONCORD 102. Alt. about 120 ft.		
Driller's log.		
Loam	2	2
Fine sand and sharp gravel	13	15
Sandy yellow clay	17	32
Refusal		at 32
CONCORD 103. Alt. about 120 ft.		
Driller's log.		
Medium brown gravel	10	10
Fine brown sand	20	30
Fine gray silt	30	60
Fine gray sand	10	70
Fine gray gravel	10	80
Refusal		at 80
CONCORD 107. Alt. about 125 ft.		
Driller's log.		
Loam	2	2
Hard yellow clay and sharp gravel	13	15
Fine yellow sand and clay	41	56
Fine yellow sand	11	67
Silky yellow sand	20	87
Refusal		at 87

Table 4.--Logs of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
CONCORD 109. Alt. about 125 ft.		
Driller's log.		
Loam	2	2
Fine brown sand and small sharp gravel	13	15
Fine brown sand and clay	46	61
Silky gray sand	8	69
Refusal		at 69
HUDSON 34. Alt. about 220 ft.		
Driller's log.		
Gravel	21.0	21.0
Sand, coarse	4.4	25.4
Not reported	4.3	29.7
Refusal		at 29.7
HUDSON 36. Alt. about 260 ft.		
Driller's log.		
Clay, gravel, coarse gray	13	13
Sand, sharp, gray	6	29
Not reported	3.7	32.7
Refusal		at 32.7
HUDSON 39. Alt. about 250 ft.		
Driller's log.		
Clay, sandy, sand, coarse, gravel, fine	19.5	19.5
Refusal		at 19.5
HUDSON 44. Alt. about 205 ft.		
Driller's log.		
Gravel	20.0	20.0
Sand, clayey	18.7	38.7
Sand, clayey, blue	6.3	45.0
Sand, coarse, clay	3.2	48.2
Sand, coarse, sharp	1.8	50.0
HUDSON 46. Alt. about 205 ft.		
Driller's log.		
Gravel	7.0	7.0
Sand, clayey	29.0	36.0
Not reported	3.5	39.5
Refusal		at 39.5
HUDSON 47. Alt. about 205 ft.		
Driller's log.		
Sand, clayey	42.5	42.5
Clay, hard, sand	9.0	51.5
Sand, clayey	1.5	53.0
Gravel, fine, some clay	4.2	57.2
Not reported	1.0	58.2
Refusal		at 58.2
HUDSON 49. Alt. about 200 ft.		
Driller's log.		
Gravel, coarse	16.0	16.0
Refusal		at 16.0
HUDSON 53. Alt. 202.0 ft.		
Driller's log.		
Loam	1.2	1.2
Sand, gravel	2.4	3.6
Sand, fine	6.1	9.7
Sand, water bearing	15.5	25.2
Gravel, sand, fine	1.8	27.0
HUDSON 72. Alt. 201.6 ft.		
Driller's log.		
Loam and turf	1.8	1.8
Sand, fine gravel, clay	12.3	14.1
Sand, fine, water bearing	11.4	25.5
Sand, fine gravel	2.9	28.4
Hardpan		at 28.4
MARLBOROUGH 1. Alt. about 230 ft.		
Driller's log.		
Loam	1.5	1.5
Fine sand and fine gravel	12.5	14
Coarse brown sand and gravel	6	20
Fine gray clayey sand	16	36
Fine sand, clay, and sharp gravel	5	41
Refusal		at 41
MARLBOROUGH 2. Alt. about 220 ft.		
Driller's log.		
Loam	1.5	1.5
Brown sand and gravel	11.5	13
Gray sand, gravel, boulders, little clay	6	19
Refusal		at 19
MARLBOROUGH 3. Alt. about 220 ft.		
Driller's log.		
Loam	1	1
Brown sand, gravel, and boulders	11	12
Gray sand, gravel, boulders, and little clay	14	26
Refusal		at 26
MARLBOROUGH 4. Alt. about 230 ft.		
Driller's log.		
Loam	1	1
Brown sand, gravel, and boulders	14	15
Fine sand and clay	18	33
Fine sand, fine gravel, and clay	6.7	39.7
Refusal		at 39.7
MARLBOROUGH 6. Alt. about 240 ft.		
Driller's log.		
Fine brown sand and clay	27	27
Fine gray sand and clay	7	34
Fine sand, fine gravel, and clay	6.4	40.4
Refusal		at 40.4
MARLBOROUGH 7. Alt. about 210 ft.		
Driller's log.		
Loam and gravel	.7	.7
Sand, gravel, clay, and boulders	8.3	9
Sand, gravel, and boulders	8	17
Fine gray clay	14	31
Brown sandy clay	53	84
Firm clay and scattered sharp gravel	3.8	87.8
Refusal		at 87.8
MAYNARD 51. Alt. about 215 ft.		
Driller's log.		
Gray sharp gravel, sand and clay	23	23
Gray sharp gravel, sand and clay. Tight	4	27
MAYNARD 54. Alt. about 210ft.		
Driller's log.		
Brown fine sand and some gravel	16	16
Gray fine sand and clay	46.5	62.5
MAYNARD 55. Alt. about 190 ft.		
Driller's log.		
Brown fine sand	17	17
Gray sharp gravel, sand and clay	5	22
Brown fine sand, some gravel and clay	5	27
Brown fine sand and clay	3	30
MAYNARD 59. Alt. about 180 ft.		
Driller's log.		
Topsoil	1	1
Fine brown sand and clay	14	15
Fine gray sand	35	50
Fine brownish-gray sand and clay. Tight	15	65
Fine gray sand and clay	13	78
Fine gray sand	11	89
Fine gray sand, little gravel.	2	91
Fine gray sand	20	111
Hardpan, broken stone, and clay		at 111
MAYNARD 60. Alt. about 190 ft.		
Driller's log.		
Fill	4	4
Fine brown sand and clay	25	29
Fine gray sand and clay	52.6	81.6
MAYNARD 61. Alt. about 200 ft.		
Driller's log.		
Topsoil	1.0	1.0
Medium to coarse sand and gravel	9.0	10.0
Fine brown sand and clay	12.0	22.0
Fine gray sand and clay	47.8	69.8
Hardpan, broken stone and clay	4.5	74.3
Refusal		at 74.3
MAYNARD 62. Alt. about 180 ft.		
Driller's log.		
Fine sand and brown broken gravel	21.8	21.8
Fine brown sand and layers of clay	8.2	30.0
Fine gray sand and clay	38.3	68.3
Clay and small black broken stone. Drove very hard	6.4	74.7
Refusal		at 74.7
MAYNARD 63. Alt. about 190 ft.		
Driller's log.		
Sand and gravel	15	15
Fine sand and gravel	8	23
MAYNARD 67. Alt. about 200 ft.		
Driller's log.		
Peat	10	10
Fine gray sand and clay	21	31
Fine gray sand, some clay and large gravel changing to brown	5	36
Fine to medium brown sand, large gravel. Water clayey looking	6	42
Fine to medium brown sand and large gravel. Pumped freely.	5.5	47.5
Fine to medium brown sand and gravel. Pumped freely	5.5	53
Fine to medium grayish-brown sand and gravel. Pumped freely	5.5	58.5
Fine to medium gray sand and gravel with clay. Tight--no good	6.5	65
STOW 73. Alt. about 205 ft.		
Driller's log.		
Brown fine sand and some gravel	16	16
Brown medium sand	10	26
Gray fine sand	9	35
Brown fine sand	25.5	60.5
STOW 74. Alt. about 205 ft.		
Driller's log.		
Medium to coarse brown sand, some gravel	20	20
Brown fine sand and clay	12	32
Fine gray sand and clay	28	60
STOW 75. Alt. about 190 ft.		
Driller's log.		
Hardpan and gravel	14	14
Clay and fine brown sand and clay	26	40
Fine gray sand and clay	40	80
STOW 76. Alt. about 190 ft.		
Driller's log.		
Medium to coarse sand	20	20
Coarse sand and gravel	10	30
Clay and sand	1	31
Coarse sand and gravel. Trace of clay. Pumped little	4	35
Coarse sand and gravel. Trace of clay	5	40
Broken gravel, clay. Tight	11	51
Refusal		at 51
STOW 77. Alt. about 180 ft.		
Driller's log.		
Topsoil	2	2
Fine to medium brown sand	16	18
Brown clay	1	19
Brown medium sand and gravel	4	23
Gray medium sand, some gravel.	5	28
Gray medium sand, some gravel, trace of clay	6	34
STOW 78. Alt. about 180 ft.		
Driller's log.		
Sand	16	16
Sand, gravel	5	21
Sharp gravel, sand, some clay.	5	26
Sharp gravel, clay	11	37
STOW 79. Alt. about 190 ft.		
Driller's log.		
Brown sand and gravel, some clay	16	16
Fine sand and gravel	5	21
Fine sand	28.5	49.5

Table 4.--Logs of selected wells and test wells in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
STOW 80. Alt. about 200 ft.		
Driller's log.		
Gray sand and gravel	15	15
Brown sand and gravel	6	21
Brown sand and gravel, some fine sand	7	28
Sand and gravel	2	30
Sharp gravel and sand	2.5	32.5
STOW 81. Alt. about 180 ft.		
Driller's log.		
Fine sand	16	16
Fine sand and clay	22	38
Brown gray fine sand and clay	13	51
Sharp gray sand, gravel and clay. Tight	4	55
STOW 83. Alt. about 200 ft.		
Driller's log.		
Sand and gravel	10	10
Sand and gravel with boulders. Pump drove hard	6	16
Medium sand, gravel and boulders. Pump drove hard	6	22
Sand and gravel	5	27
Sand and gravel with boulders	3.8	30.8
Gray sand, gravel with clay	6.7	37.5
STOW 84. Alt. about 180 ft.		
Driller's log.		
Mud	2	2
Gray brown sand and gravel	14	16
Gray sand, gravel and clay	5	21
Gray fine sand and clay	11	32
Gray sand, gravel and clay	6	38
STOW 85. Alt. about 185 ft.		
Driller's log.		
Sand and gravel. Tight	16	16
Brown medium sand	6	22
Brown fine sand	5	27
Gray fine sand	5	32
Gray fine sand with some clay	5	37
Gray fine sand and clay	15	52
STOW 86. Alt. about 185 ft.		
Driller's log.		
Brown sand and gravel	16	16
Brown fine sand	23	39
Sand, gravel and traces of clay	2	41
Medium sand	7	48
Sand, some gravel and traces of clay	5	53
Sharp gravel and fine sand. Tight	2.5	55.5
STOW 90. Alt. about 180 ft.		
Driller's log.		
Medium brown sand and gravel; sand gets fine, lighter color	20	20
Fine brown sand, some small gravel	11	31
Fine to medium brown sand, some small gravel, specks of clay. Pumped very little	5	36
Fine to medium brown sand, large gravel. Pumped fair	4.5	40.5
Medium to coarse brown sand and gravel, sand gets finer	5.5	46
Fine to medium brown sand. Gravel and clay at 50 ft. Tight	5	51
Fine to medium brown sand and broken gravel with clay. Pumped a little. Tight	5	56
Not reported	2	58
Refusal		at 58
STOW 91. Alt. about 200 ft.		
Driller's log.		
Fill	5	5
Medium brown sand and gravel with clay	15.5	20.5
Fine to medium brown sand and gravel. Pumped fair	10.5	31
Fine brown sand and sharp gravel with clay. Tight	10	41
Not reported	1	42
Bouncing		at 42
STOW 92. Alt. about 190 ft.		
Driller's log.		
Large gravel and medium brown sand with clay	18	18
Fine brown sand, gets coarser. Pumped good	5	23
Fine to medium brown sand and gravel. Pumped good	5	28
Medium brown sand and gravel. Pumped good at 33 ft.	10	38
Medium brown sand and gravel, Sand gets finer	6	44
Not reported	3	47
Bouncing		at 47
STOW 94. Alt. about 200 ft.		
Driller's log.		
Fine to medium brown sand and gravel, some clay. Pumped very little sand. Tight	23	23
Fine to medium gray sand and gravel with clay. Tight	6	29
Fine to medium gray sand and broken gravel with clay. Tight	4	33
Bouncing		at 33
STOW 95. Alt. about 250 ft.		
Driller's log.		
Medium brown sand and large gravel. Specks of clay turning to gray. Pumped good	23	23
Medium gray sand and large gravel. Pumped good	5	28
Medium gray sand and large gravel, comes into brown material. Pumped good	5	33
Fine brown sand, some gravel mixed in. Tightened up	7	40
Not reported	2.5	42.5
Bouncing		at 42.5
STOW 98. Alt. about 220 ft.		
Driller's log.		
Fine to medium brown sand and gravel, some clay. Pumped fair	20	20
Medium brown sand and gravel. Pumped good	16	36
Medium brown sand and gravel, changing to fine gray	5	41
Fine gray sand, some gravel	5	46
Fine to medium gray sand and gravel. Pumped fair	11	57
Fine gray sand, some gravel and clay. On the tight side.	5.5	62.5
STOW 101. Alt. about 200 ft.		
Driller's log.		
Peat	2	2
Fine to medium brown sand and broken gravel with clay. Tight	18	20
Fine brown sand and large gravel with clay. Pumped all sand	6	26
Bouncing		at 26
STOW 102. Alt. about 200 ft.		
Driller's log.		
Loam and peat	4	4
Fine brown sand, some gravel and clay changing to gray	22	26
Fine gray sand and large gravel. Pumped mostly sand	25	51
Fine gray sand and broken gravel, some clay. Pumped on the tight side	5.5	56.5
Not reported	1.1	57.6
Bouncing		at 57.6
STOW 104. Alt. about 220 ft.		
Driller's log.		
Fine brown sand, large stones, some clay. Pumped fair	20	20
Fine to medium brown sand and large gravel, specks of clay. Pumped good water, iron taste	5	25
Fine brown sand and gravel, coming into gray sand	5.5	30.5
Fine gray sand and clay, no good	45.5	76
Fine gray sand, some blue sharp gravel and clay	2	78
Bouncing. No good		at 78
STOW 106. Alt. about 190 ft.		
Driller's log.		
Fine brown sand, some gravel and clay. Drove hard. Tight. No good	24.5	24.5
Bouncing		at 24.5
STOW 109. Alt. about 185 ft.		
Driller's log.		
Fine brown sand, some gravel	10.0	10.0
Fine gray sand, some small gravel mixed with clay	23.1	33.1
STOW 110. Alt. about 240 ft.		
Driller's log.		
Topsoil	2	2
Sand and clay	34	36
Sand, gravel and clay	16	52
Hardpan	4	56
Refusal		at 56
STOW 111. Alt. about 240 ft.		
Driller's log.		
Topsoil	1	1
Sand and gravel	21	22
Hardpan	6	28
Refusal		at 28
SUDBURY 152. Alt. about 175 ft.		
Driller's log.		
Brown sand	15	15
Sharp gravel, sand. Tight	8.5	23.5
SUDBURY 153. Alt. about 190 ft.		
Driller's log.		
Fine brown sand	27	27
Fine gray sand and clay	53	80
SUDBURY 154. Alt. about 190 ft.		
Driller's log.		
Brown sand and gravel	15	15
Brown medium fine sand	6	21
Fine brown sand	11	32
Medium brown fine sand	5	37
Gray fine sand with some gravel and clay	5	42
Gray sand, gravel and clay	5.5	47.5

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts

(Thicknesses and depths below land-surface are given in feet)

MIDDLESEX COUNTY

ACTON

U.S. Geological Survey Auger Borings

a1. Alt. about 190 ft. Geologist's log.

	Thickness	Depth
Sand, very fine, brown, slightly moist, well sorted, subangular	8	8
Gravel	1	9
Sand, very fine, brown, moist, well sorted, subangular; trace of silt	6	15
Sand, very fine, brown to gray, wet, well sorted, subangular, and silt	35	50
Sand, gray, and gravel	5	55
Sand, very fine gray and silt	9	64
Till	4	68
Refusal		at 68

a2. Alt. about 175 ft. Geologist's log.

	Thickness	Depth
Sand, fine to very coarse, brown, dry poorly sorted, subangular; fine, subangular gravel	5	5
Sand, medium, brown, wet, well sorted; finer at bottom	5	10
Refusal		at 10

a3. Alt. about 195 ft. Geologist's log.

	Thickness	Depth
Sand, medium to very coarse, brown, dry, poorly sorted, subangular to subrounded; fine, brown gravel	6	6
Sand, medium, and fine gravel; well sorted	2	8
Refusal		at 8

a4. Alt. about 195 ft. Geologist's log.

	Thickness	Depth
Gravel, hard	1	1
Sand, fine to very coarse, brown, dry, subangular to subrounded, and fine, brown gravel; some medium gravel last 7 ft. less compact and finer	16	17
Sand, fine to very fine, light brown, dry, well sorted	5	22
Sand, very fine, slightly moist, well sorted; trace of very fine gravel	16	38
Sand, medium, well sorted; some lenses of coarse sand to fine gravel; last 6 ft. drilled hard	11	49
Refusal		at 49

a5. Alt. about 230 ft. Geologist's log.

	Thickness	Depth
Sandy fill	3	3
Sand and gravel	3	6
Sand, medium to coarse and fine, brown gravel; water at 10 ft.	6	12
Sand, medium to coarse, rounded to subrounded, and fine, brown gravel; less gravel and more fine sand in last 5 ft.	15	27
Sand, fine to coarse, gray. Harder drilling at 30 ft.	5	32
Sand, fine to coarse; some large, gray, subangular gravel	5	37
Sand, fine to coarse, gray	5	42
Sand, fine to medium, gray	20	62
Sand, compact, fine, gray	1	63
Refusal		at 63

a6. Alt. about 225 ft. Geologist's log.

	Thickness	Depth
Fill; water at approximately 10 ft.	12	12
Sand, fine to coarse, rounded to subangular, mostly quartz, phyllite, and mica; some fine gravel	5	17
Sand, very fine and gray silt	5	22
Gravel, probably coarse; hard drilling from 24 to 26 ft.	4	26
Refusal		at 26

a7. Alt. about 160 ft. Geologist's log.

	Thickness	Depth
Sand, all sizes, and fine to medium gravel; water at 12 ft.	12	12
Sand, fine to coarse, brown	10	22
Sand, very fine to fine, brown; some medium to coarse sand	5	27
Sand, very fine to fine, brown	15	42
Sand, very fine to fine, brown; some medium to coarse sand	13	55

a7.--Continued

	Thickness	Depth
Sand, very fine to fine, gray; some medium to coarse; some black "chips"; hard drilling from 63 to 67 ft.	12	67
Refusal		at 67

a8. Alt. about 150 ft. Geologist's log.

	Thickness	Depth
Sand, fine, yellow, rounded; water at 5.60 ft.	12	12
Sand, fine; some medium to coarse sand and gravel; water at 14 ft.	5	17
Sand, fine to coarse; some gravel	5	22
Sand, fine to coarse, and fine to medium gravel; hard drilling from 23 to 27 ft.	5	27
Sand, compact, fine to medium; some gravel and gray clay	4	31
Refusal		at 31

a9. Alt. about 155 ft. Geologist's log.

	Thickness	Depth
Sand, medium to coarse, brown.	7	7
Sand, medium to fine, brown	5	12
Gravel, fine to medium, and coarse to medium sand; hard drilling at 15 ft.	12	20
Refusal		at 20

a10. Alt. about 155 ft. Geologist's log.

	Thickness	Depth
Sand, fine, brown; water at 17 ft.	22	22
Sand, medium to coarse; rough drilling at 25 ft.	20	42
Sand, fine to coarse	5	47
Silt and fine, gray sand; hard drilling at 69 ft.	22	69
Not reported	3	72
Refusal		at 72

a11. Alt. about 150 ft. Geologist's log.

	Thickness	Depth
Sand, medium to coarse, brown.	9	9
Sand, coarse and fine, clean gravel; water at 15 ft.	8	17
Sand, medium to coarse, and fine, clean gravel	15	32
Sand, medium to coarse	5	37
Sand, medium	5	42
Sand, medium to fine, gray; harder drilling at 44 ft.	10	52
Not reported	1	53
Refusal		at 53

a12. Alt. about 150 ft. Geologist's log.

	Thickness	Depth
Sand, fine to very fine, brown; hard drilling at 15 ft; water at 15 ft.	17	17
Sand, coarse to very coarse, and fine to medium gravel	10	27
Sand, fine to coarse	5	32
Sand, fine to medium	8	40
Refusal		at 40

a13. Alt. about 155 ft. Geologist's log.

	Thickness	Depth
Sand, medium to fine	8	8
Sand, fine to coarse, and fine gravel; hard drilling from 8 to 11 ft.	4	12
Sand, coarse and fine to medium gravel; some medium sand	5	17
Not reported	1	18
Refusal		at 18

a14. Alt. about 165 ft. Geologist's log.

	Thickness	Depth
Sand, fine to very fine and silt; fine gravel. Hard drilling at 65 ft.	76	76
Refusal		at 76

a15. Alt. about 170 ft. Geologist's log.

	Thickness	Depth
Sand, coarse, brown; water at 12.4 ft; gravel lense at 16 ft.	24	24
Gravel and coarse sand; very hard at 31 ft.	7	31
Not reported	2	33
Refusal		at 33

a16. Alt. about 180 ft. Geologist's log.

	Thickness	Depth
Sand, very fine to fine, brown	2	2
Gravel; very hard drilling	9	11
Till, loose; water at 12 ft.	2	13
Refusal		at 13

a17. Alt. about 155 ft. Geologist's log.

	Thickness	Depth
Sand, medium to coarse, brown; water at 10 ft.	12	12
Not reported	1	13
Refusal		at 13

a18. Alt. about 155 ft. Geologist's log.

	Thickness	Depth
Sand, medium, poorly sorted	12	12
Sand, coarse; water at 14 ft.	5	17
Sand, very coarse; some fine, brown gravel	5	22
Sand, very coarse; some fine, gray gravel; medium hard drilling	5	27
Sand, very coarse, and fine gravel; medium to fine sand.	42	69
Refusal		at 69

Mass. Dept. Public Works Bridge Borings

A2-1-2. Alt. 136.3 ft. Driller's log.

	Thickness	Depth
Fill	10.0	10.0
Coarse sand and gravel	5.0	15.0
Sand and gravel	10.0	25.0
Compact fine sand and clay	8.0	33.0
Compact very fine sand and clay	14.5	47.5
Very compact clay, sand and gravel	1.3	48.8
Rock obstruction		at 48.8

A2-7-2. Alt. about 132 ft. Driller's log.

	Thickness	Depth
Loose, coarse, dirty sand and gravel	10.0	10.0
Compact fine sharp sand and little clay	4.3	14.3
Sharp fine sand	2.7	17.0
Compact sharp fine sand and clay	3.0	20.0

A2-13-4. Alt. 143.8 ft. Driller's log.

	Thickness	Depth
Loam, sand, gravel and boulder fill	6.5	6.5
Loose sand, gravel and boulders	4.8	11.3
Fine sand	5.9	17.2
Coarse sand and little gravel.	11.8	29.0
Sand, gravel, and boulders	1.0	30.0
Boulder		at 30.0

A2-29-1. Alt. 167.1 ft. Driller's log.

	Thickness	Depth
Loamy sand	2.0	2.0
Firm coarse sand	2.0	4.0
Hard coarse sand and gravel	7.0	11.0
Hard cemented sand, gravel, and hardpan	2.5	13.5
Refusal		at 13.5

A2-35-3. Alt. 240.1 ft. Driller's log.

	Thickness	Depth
Rip-rap fill	6.0	6.0
Hard sand and fine gravel, hardpan	3.5	9.5
Refusal		at 9.5

A2-36-5. Alt. 210.9 ft. Driller's log.

	Thickness	Depth
Loamy sand and stones	1.5	1.5
Hard sand, gravel and boulders	4.5	6.0
Hard sand, gravel and mica, hardpan	2.5	8.5
Refusal		at 8.5

A2-37-6. Alt. 195.7 ft. Driller's log.

	Thickness	Depth
Sand and gravel fill	5.0	5.0
Hard coarse sand and gravel	5.5	10.5
Hard coarse sand, gravel	1.0	11.5
Refusal		at 11.5

BOXBOROUGH

U.S. Geological Survey Auger Borings

a1. Alt. about 235 ft. Geologist's log.

	Thickness	Depth
Sand, very fine, light brown, moist, well sorted, subangular, predominantly quartz, mica and some mafic	4	4
Sand, medium; some lenses of very fine gravel; loose	17	21
Sand, coarse, and gravel; hard drilling	4	25
Sand, medium and fine gravel; hard drilling	4	29
Till: clay, silt, sand, fine gravel; compact; dry	14	43

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

BOXBOROUGH (Continued)

U.S. Geological Survey Auger Borings (Continued)

a2. Alt. about 235 ft. Geologist's log.

	Thickness	Depth
Sand, fine, brown to light red-brown, moist, relatively well sorted, subangular to subouunded, predominantly quartz and some mica; some very fine to coarse sand; gravel lenses at 16, 29, 34, and 38 ft.	40	40
Boulder		at 40

a3. Alt. about 235 ft. Geologist's log.

	Thickness	Depth
Sand, very fine to medium, brown, dry, some quartz and mica	4	4
Sand, fine to very coarse, and fine, subangular gravel	2	6
Sand, medium to coarse, and fine gravel; gravel at 18 ft.	15	21
Refusal		at 21

Mass. Dept. Public Works Bridge Borings

B18-1-3A. Alt. 227.0 ft. Driller's log.

	Thickness	Depth
Loamy sand	2.0	2.0
Hard sand, gravel and boulders.	3.5	5.5
Hard, yellow sand, little gravel	6.0	11.5
Hard cemented blue sand and fine gravel	4.5	16.0
Refusal		at 16.0

B18-2-11. Alt. 281.26 ft. Driller's log.

	Thickness	Depth
Topsoil	1.0	1.0
Fine brown sand trace of gravel	4.0	5.0
Fine brown sand, trace of gravel and clay	5.0	10.0
Fine brown sand, some gravel, trace of clay	5.0	15.0
Fine to coarse brown sand, some gravel	6.3	21.3
Refusal		at 21.3

CONCORD

U.S. Geological Survey Auger Borings

a1. Alt. about 150 ft. Geologist's log.

	Thickness	Depth
Silt, brown, dry, extremely well sorted; gravel lense at 7 ft.	25	25
Silt and very fine moist quartz-rich sand; some very fine, green sand; easy drilling	15	40
Sand, very fine to fine, well sorted, 90 percent quartz-rich; intermittent gravel lenses	14	54
Gravel, compact, fine to medium; slow drilling	2	56
Refusal		at 56

a2. Alt. about 130 ft. Geologist's log.

	Thickness	Depth
Sand, fine to very coarse, brown, dry, poorly sorted, subangular, and fine gravel; hard drilling	5	5
Sand, fine to very coarse, and very fine to medium, subangular to subrounded gravel	5	10
Sand, fine, well sorted; minor coarse sand from 10 to 15 ft; wet at 40 ft; gravel lenses at 35 and 41 ft.	38	48
Refusal		at 48

a3. Alt. about 128 ft. Geologist's log.

	Thickness	Depth
Sand, very fine to very coarse, brown, dry, poorly sorted, subangular to subrounded, predominantly quartz and mica; silt; fine gravel	5	5
Sand, loose, medium, brown, dry well sorted, subrounded to well rounded, quartz rich; some coarse to very coarse sand	10	15
Sand, medium, moist; some coarse to very coarse sand and fine gravel	5	20

a3.--Continued

	Thickness	Depth
Sand, fine, wet and some medium to coarse sand; easy drilling	5	25
Sand, fine to very fine, slightly green; some silt and coarse sand	5	30
Clay and green silt; some fine gravel	4	34
Refusal		at 34

a4. Alt. about 195 ft. Geologist's log.

	Thickness	Depth
Sand, very fine to very coarse, brown, dry, poorly sorted, angular to subangular; silt; fine, brown gravel; hard drilling	10	10
Sand, fine to medium, red-brown; some coarse sand and fine gravel	1	11
Sand, loose, medium to very coarse, red-brown average sorted, subangular to subrounded, and fine gravel; gravel lense at 14 ft.; some fine sand from 15 to 18 ft; water at 16.8 ft.	7	18
Gravel, medium; some fine sand	2	20
Till: clay, silt, sand and fine gravel	1	21
Refusal		at 21

Mass. Dept. Public Works Bridge Borings

C19-7-3. Alt. 113.5 ft. Driller's log.

	Thickness	Depth
Loose, fine, yellow sand and mica; water at 1 ft.	37.0	37.0
Loose, fine, gray sand	56.0	93.0

C19-8-4. Alt. 131.5 ft. Driller's log.

	Thickness	Depth
Sand, gravel and red brick fill	11.0	11.0
Medium gray sand and silt	5.0	16.0
Coarse yellow sand and gravel.	7.5	23.5
Fine gray sand, trace of clay.	27.5	51.0
Fine yellow sand, trace of clay	41.0	92.0
Not reported	1.0	93.0
Refusal		at 93.0

C19-18-6. Alt. 122.9 ft. Driller's log.

	Thickness	Depth
Sand and gravel fill, soft peat	5.0	5.0
Hard, coarse sand and gravel	8.0	13.0
Hard cemented sand and gravel, hardpan	5.5	18.5
Refusal		at 18.5

C19-22-3. Alt. 138.4 ft. Driller's log.

	Thickness	Depth
Loose fine sand and gravel fill	5.5	5.5
Firm, fine, gray sand and little clay; water at 6 ft.	14.5	20.0

C19-27-2C. Alt. 126.3 ft. Driller's log.

	Thickness	Depth
Filling	3.8	3.8
Very fine sand with trace of clay	8.5	12.3
Silt, sand and some gravel	3.2	15.5
Compact sand and gravel	7.5	23.0
Very compact sand, gravel, and clay	11.0	34.0

C19-19-1. Alt. 115 ft. Driller's log.

	Thickness	Depth
Peat, soft	4.5	4.5
Sand, hard	3.5	8.0
Sand, coarse, gravel	4.5	12.5
Sand, yellow	3.0	15.5
Sand, gray, clay	9.5	25.0
Sand and gravel	5.5	30.5
Water level		2.5

HUDSON

U.S. Geological Survey Auger Borings

a1. Alt. about 207 ft. Geologist's log.

	Thickness	Depth
Sand, loose, very fine, moist, well sorted; some fine to medium sand and silt	5	5
Sand, fine to very coarse, poorly sorted, subangular to subrounded, and fine gravel; water at 7 ft.	5	10

a1.--Continued

	Thickness	Depth
Sand, fine to medium, well sorted	4	14
Sand, fine to very coarse and very fine gravel	1	15
Sand, medium, well sorted; some fine sand; percent of fines increases with depth.	5	20
Sand, very fine; some silt and fine to medium sand; very hard drilling	2	22

a2. Alt. about 207 ft. Geologist's log.

	Thickness	Depth
Sand, loose, fine to very fine, brown, slightly moist	6	6
Sand, fine to medium; some fine to coarse gravel; hard drilling	8	14
Refusal		at 14

a3. Alt. about 207 ft. Geologist's log.

	Thickness	Depth
Sand, fine to very coarse and fine gravel	5	5
Till: predominantly clay, some sand, and some fine gravel.	1	6
Refusal		at 6

a4. Alt. about 207 ft. Geologist's log.

	Thickness	Depth
Sand, loose, fine, brown, dry.	4	4
Gravel lense	1	5
Sand, fine to very fine, moist; easy drilling	4	9
Sand, fine to coarse, red, well sorted; some silt; water at 12 ft.	9	18
Till: blue clay, some sand and some fine gravel	4	22
Refusal		at 22

a5. Alt. about 215 ft. Geologist's log.

	Thickness	Depth
Sand, medium, brown, dry, average sorted, quartz-rich; some fine gravel; easy drilling	15	15
Sand, medium to coarse, well sorted; water at 20 ft.	5	20
Sand, medium, well sorted; some fine sand; intermittent gravel lenses from 30 to 40 ft.	25	45
Sand, medium to very coarse, well sorted, and very fine gravel	12	57
Till: predominantly clay with admixed gravel	7	64
Refusal		at 64

Mass. Dept. Public Works Bridge Borings

H25-8-3. Alt. about 195 ft. Driller's log.

	Thickness	Depth
Loose, coarse sand and gravel and stones	2.0	2.0
Hard sand and gravel	4.7	6.7
Loose medium sand	6.3	13.0
Hard, fine sand; little clay and gravel	4.8	17.8

H25-16-5. Alt. 207.5 ft. Driller's log.

	Thickness	Depth
Very soft dark gray sandy silt	5.0	5.0
Loose medium to coarse gray sand	1.5	6.5
Compact medium to coarse yellow sand, some gravel, trace of fine sand	6.5	13.0
Loose fine to very fine gray sand, trace of silt	18.0	31.0
Loose very fine to fine silty gray sand, some medium gray clay	35.0	66.0
Loose medium to coarse yellow-gray sand, some gravel	5.0	71.0
Very coarse to coarse gray sand and gravel	9.0	80.0
Coarse to very coarse gray sand and gravel, trace of medium to fine sand	10.0	90.0
Very fine silty gray sand, trace of clay	5.0	95.0
Very fine to fine silty gray sand, trace of gravel and clay	3.5	98.5
Refusal		at 98.5

Water at surface.

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
HUDSON (Continued)		
Mass. Dept. Public Works Bridge Borings (Continued)		
H25-17-8. Alt. 230.00 ft. Driller's log.		
Loam	1.5	1.5
Medium to fine yellow sand, some fine gravel and coarse yellow sand, trace of silt, boulders; water at 7.5 ft	7.0	8.5
Very fine silty yellow sand, some medium yellow clay	6.5	15.0
Medium yellow clayey silt, trace of very fine sand	6.0	21.0
Medium to fine micaceous yellow sand, some gravel and coarse yellow sand, trace of silt and clay, boulders	4.5	25.5
Refusal		at 25.5
Mass. Dept. Public Works Roadway Borings		
I-495-5(9)45		
61B. Alt. 337.1 ft. Driller's log.		
Brown fine sand, some silt, little fine to coarse gravel.	4.5	4.5
Refusal		at 4.5
I-495-5(11)42		
71. Alt. 207.2 ft. Driller's log.		
Peat	6.3	6.3
Medium to coarse gray sand	5.7	12.0
Medium to coarse brown sand and gravel	4.5	16.5
Water		at 0.0
76. Alt. 266.6 ft. Driller's log.		
Topsoil, fine dark-brown sand, little silt coarse to fine red brown sand, trace of silt	2.0	2.0
Coarse to fine gray brown sand, little silt, trace of fine gravel and silt; water at 3.5 ft	11.0	13.0
Coarse to fine gray brown sand, little silt, trace of fine gravel and clay; boulders from 13.3 to 16.3 ft	8.5	21.5
LITTLETON		
Mass. Dept. Public Works Bridge Borings		
L13-18-5. Alt. 248.4 ft. Driller's log.		
Loamy sand and stones	1.5	1.5
Hard, coarse sand and gravel	6.0	7.5
Refusal		at 7.5
MARLBOROUGH		
Mass. Dept. Public Works Bridge Borings		
M6-7-8. Alt. 217.1 ft. Driller's log.		
Sandy loam	2.0	2.0
Medium to fine yellow sand, some gravel and coarse yellow sand, trace of silt	4.0	6.0
Medium to fine yellow sand, some fine gravel and coarse yellow sand, trace of silt	7.0	13.0
Loose, very fine to fine silty yellow sand, trace of clay	10.0	23.0
Loose, very fine to fine silty gray sand, trace of clay	27.0	50.0
Loose fine to very fine silty gray sand, trace of clay	23.0	73.0
Loose very fine silty yellow sand, trace of clay	5.0	78.0
Fine yellow sand, trace of fine gravel and medium to coarse sand; boulders	7.0	85.0
Refusal		at 85.0
M6-8-16. Alt. 391.9 ft. Driller's log.		
Peat, wet, soft, black	7.5	7.5
Fine sand and gravel, wet, firm brown	2.5	10.0
Coarse sand and gravel, wet, loose, gray	4.0	14.0
Medium sand and gravel, stones, wet, firm, gray	6.0	20.0
M6-8-16.--Continued		
Fine sand, trace of gravel, wet, hard, gray	5.0	25.0
Fine sand, some gravel, wet, hard, gray	7.0	32.0
Refusal		at 32.0
M6-9-10A. Alt. 441.9 ft. Driller's log.		
Medium sand, wet, loose, brown	2.5	2.5
Fine sand, trace of loam, moist, loose, black	1.5	4.0
Fine sand, trace of gravel, moist, firm, yellow	2.0	6.0
Fine sand and gravel, dry, hard, yellow	5.0	11.0
Fine sand, trace of gravel and clay, moist, hard, brown	2.5	13.5
Fine sand, trace of gravel, dry, very hard, brown	2.0	15.5
Refusal		at 15.5
M6-10-10. Alt. 465.6 ft. Driller's log.		
Fine sand, some loam, dry, loose, brown	2.5	2.5
Fine sand, some gravel, dry, hard, yellow	5.5	8.0
Bedrock	5.0	13.0
M6-12-10A. Alt. 304.8 ft. Driller's log.		
Fine sand, trace of gravel and loam, dry, loose, brown	3.0	3.0
Fine sand, trace of gravel, dry, firm, yellow	5.0	8.0
Medium sand, trace of gravel, dry, firm, yellow	5.0	13.0
Fine sand, some gravel, dry, firm, yellow	5.0	18.0
Refusal		at 18.0
M6-13-3. Alt. 286.1 ft. Driller's log.		
Very soft, wet, dark brown, sandy peat; water at .5 ft	6.9	6.9
Moist, medium dense gray-brown fine to coarse sand and gravel, trace of silt	5.6	12.5
Medium dense moist gray fine sand, some silt	16.5	29.0
Very dense, moist, gray-brown fine to coarse sand and gravel, trace of silt	2.5	31.5
Mass. Dept. Public Works Roadway Borings		
I-495-5(11)42		
3C. Alt. 464.7 ft. Driller's log.		
Brown fine to coarse sand	16.0	16.0
Gray fine-medium sand, little silt, till, boulder 16.0-17.1	9.3	27.3
Bedrock	8.0	35.3
14. Alt. 437.4 ft. Driller's log.		
Medium to coarse brown sand and gravel; water at 2.3 ft	9.5	9.5
Refusal		at 9.5
15. Alt. 431.1 ft. Driller's log.		
Medium to coarse brown sand and gravel	2.1	2.1
Fine to medium sand and gravel Water at 3.2 ft	7.2	9.3
Bedrock	8.0	17.3
16. Alt. 445.6 ft. Driller's log.		
Medium to coarse, brown sand and gravel; water at 6.9 ft.	23.6	23.6
Bedrock	8.0	31.6
25. Alt. 402.3 ft. Driller's log.		
Fine to medium brown sand, trace of gravel	3.4	3.4
Fine to medium brown sand and gravel; water at 8.7 ft	13.6	17.0
Decomposed rock	3.7	20.7
Bedrock	8.0	28.7
32. Alt. 357.5 ft. Driller's log.		
Topsoil, fine dark brown sand, little silt	1.2	1.2
Coarse to fine brown sand, trace of fine gravel and silt; water at 1.8 ft	4.3	5.5
Coarse to fine red brown sand, trace of fine gravel and silt	5.5	11.0
Decayed rock	2.4	13.4
Bedrock	8.0	21.4
36. Alt. about 285 ft. Driller's log.		
Brown coarse sand, some gravel	2.0	2.0
Hit peat at 6 ft; about 1 ft. gray and brown coarse sand, trace of gravel	4.0	6.0
Light brown coarse sand, trace of gravel	5.3	11.3
Red medium fine sand, trace of gravel	5.2	16.5
46. Alt. 283.9 ft. Driller's log.		
Dark brown silt and peat; water at 0.5 ft	7.2	7.2
Gray brown fine sand, little silt	5.8	13.0
Gray brown fine to coarse sand and gravel, trace of silt	13.5	26.5
50. Alt. 336.0 ft. Driller's log.		
Medium to fine red brown sand, trace of fine gravel and silt	2.3	2.3
Coarse to fine brown sand, trace of fine gravel and silt; water at 10.8 ft. Boulders from 14.8 to 18.8 ft	17.3	19.6
Bedrock	9.0	28.6
57C. Alt. about 290 ft. Driller's log.		
Brown fine to coarse sand, some fine to medium gravel, little silt; water at 0.5 ft	3.0	3.0
Brown fine to medium sand, trace of silt and coarse sand	10.0	13.0
Bedrock	8.0	21.0
62. Alt. 320.1 ft. Driller's log.		
Topsoil, fine dark-brown sand, little silt	2.0	2.0
Medium to fine red brown sand, trace of silt, coarse to fine gray brown sand, trace of fine gravel and silt	1.2	3.2
Bedrock	8.0	11.2
No water encountered.		
65. Alt. 277.8 ft. Driller's log.		
Muck and peat; water at surface	9.7	9.7
Gray fine to medium sand, trace of silt	6.3	16.0
Brown fine to medium sand, trace of silt	5.5	21.5
69. Alt. 282.3 ft. Driller's log.		
Fine to medium brown sand	3.1	3.1
Fine to medium brown sand; water at 5.1 ft	6.1	9.2
Medium to coarse brown sand and gravel	6.8	16.0
Bedrock	8.0	24.0
I-495-5(7)39		
68. Alt. 401.1 ft. Driller's log.		
Brown fine to coarse sand, some fine to medium gravel, trace of silt	7.6	7.6
Rock fragments, little fine to coarse sand, trace of silt	5.2	12.8
Gray fine to coarse sand, some fine to medium gravel, rock fragments, trace of silt	4.2	17.0
70A. Alt. 383.1 ft. Driller's log.		
Brown fine to coarse sand, some fine to medium gravel, trace of silt; water at 1.1 ft	2.8	2.8
Gray brown fine to coarse sand some fine to medium gravel little silt	4.6	7.4
Gray fine to coarse sand, little fine to medium gravel and silt	8.6	16.0
72. Alt. 383.8 ft. Driller's log.		
Brown fine sand, some coarse sand and fine to medium gravel, little silt; water at 1.2 ft	2.4	2.4
Brown fine to coarse sand, some fine to medium gravel, trace of silt	9.5	11.9
Gray fine to coarse sand, some fine to medium gravel, trace of silt	4.1	16.0

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
MARLBOROUGH (Continued)		
Mass. Dept. Public Works Roadway Borings (Continued)		
I-495-5(7)39 (Continued)		
74. Alt. 461.7 ft. Driller's log.		
Brown fine to coarse sand, trace of silt, fine gravel and roots	2.3	2.3
Brown fine sand, trace of silt and fine gravel	4.4	6.7
Brown fine to coarse sand, some fine to medium gravel and silt; water at 17 ft	21.4	28.1
Gray fine sand, little fine to medium gravel, coarse sand and silt	5.2	33.3
Gray fine to coarse sand, little fine to medium gravel, silt and rock fragments	8.7	42.0
84. Alt. 483.2 ft. Driller's log.		
Brown fine to coarse sand, some fine to medium gravel	2.7	2.7
Brown fine to coarse sand, some fine to medium gravel, some silt	19.8	21.5
Gray fine to coarse sand, fine to medium gravel and silt; water at 22 ft	12.9	34.4
Brown fine to coarse sand, some fine to medium gravel and silt	3.0	37.4
Gray fine to coarse sand, some fine to medium gravel and silt	7.8	45.2
Gray fine to coarse sand, some fine to medium gravel, trace of silt, rock fragments	2.8	48.0
96. Alt. 461.0 ft. Driller's log.		
Fine red-brown sand, trace of silt	2.0	2.0
Coarse to fine light brown gravel and silt	5.0	7.0
Coarse to fine brown sand, trace of medium to fine gravel, little silt; water at 9.0 ft.; boulder at 10.5 ft	9.0	16.0
Metropolitan District Commission Tunnel Borings		
Wachusett-Marlborough Tunnel, Contract 283		
24. Alt. 245.0 ft. Driller's log.		
Peat	1	1
Gray and yellow clay; moist, stiff	6	7
Gray clay, trace of coarse sand, moist, very stiff	6	13
Gray coarse sand, some medium gravel, moist, very dense	5	18
Gray coarse sand and gravel	2	20
Bedrock	32	52
25. Alt. 260.0 ft. Driller's log.		
Loam	1	1
Gray medium to fine sand, trace of silt, trace of gravel, moist, medium density	6	7
Gray medium to coarse sand, trace of silt, trace of gravel, moist, very stiff	7	14
Boulders	2	16
Gray coarse sand, rock fragments, moist, very dense.	4	20
Bedrock	30	50
26. Alt. 260.0 ft. Driller's log.		
Swamp	2	2
Gray medium to fine sand, trace of gravel; trace of silt; wet loose	5	7
Gray fine sand and silt; wet, loose	7	14
Brown coarse to fine sand, trace of gravel, moist, dense	5	19
Brown coarse to fine sand, trace of gravel, rock fragments, moist, very dense.	4	22
Bedrock	30	52
27. Alt. 308 ft. Driller's log.		
Topsoil	1	1
Coarse to fine yellow sand and gravel, moist, dense	12	13
Fine gray sand, trace of gravel, moist, very dense	3	16
Not reported	16	32
Bedrock	20	52
MAYNARD		
Mass. Dept. Public Works Bridge Borings		
M10-10-1. Alt. about 169.0 ft. Driller's log.		
Silt, sand and gravel	5.0	5.0
Lost sample	4.0	9.0
Fine gray sand	6.0	15.0
Fine brown sand	4.0	19.0
Coarse sand, fine gravel	6.0	25.0
Gray sand, heavy gravel	5.0	30.0
Gray sand and gravel	3.7	33.7
Refusal		at 33.7
M10-1-11A. Alt. 173.8 ft. Driller's log.		
Sand, coarse, dirty, gravel	6.8	6.8
Sand, coarse, gravel	4.2	11.0
Sand, fine, blue, clay	4.0	15.0
Sand, fine, blue, gravel, hardpan	2.3	17.3
Rock or boulder		at 17.3
STOW		
U.S. Geological Survey Auger Borings		
a1. Alt. 265 ft. Geologist's log.		
Sand, very fine to very coarse brown, and fine gravel; some silt and clay; percent of silt and clay increases with depth	15	15
Refusal		at 15
a2. Alt. 265 ft. Geologist's log.		
Silt and moist, brown, very fine sand; easy drilling	5	5
Silt and gray, very fine sand; gravel lenses at 16 and 26 ft	27	32
Refusal		at 32
a3. Alt. 275 ft. Geologist's log.		
Sand, medium to very coarse, brown, and fine gravel	5	5
Sand, medium, brown, moist, well sorted; easy drilling.	20	25
Sand, fine to very fine, well sorted; gravel lenses at 34 and 36 ft	13	38
a4. Alt. 215 ft. Geologist's log.		
Sand, fine to very coarse, green, moist, poorly sorted, and fine to medium gravel; "crunchy" drilling	5	5
Sand, fine to medium, poorly sorted; some gravel and minor silt; loosely packed	35	40
Peat, brown	23	63
Till: heterogenous mixture of clay, silt, sand, and gravels	2	65
Refusal		at 65
a5. Alt. 242 ft. Geologist's log.		
Sand, very fine to very coarse, light brown, dry, poorly sorted, subangular to subrounded; fine gravel	5	5
Refusal on large boulders		at 5
a6. Alt. 242 ft. Geologist's log.		
Not reported	5	5
Sand, loose, fine to very coarse, brown, dry, poorly sorted, subrounded to subangular, and fine gravel.	15	20
Sand, fine, well sorted; some fine gravel; moist at 30 ft.	15	35
Sand, fine to medium well sorted, micaceous	10	45
Sand, fine, extremely well sorted; water at 48 ft	8	53
a6.--Continued		
Sand, fine to very coarse, poorly sorted, and fine gravel	12	65
Sand, fine to medium, well sorted	7	72
Till	2	74
Refusal		at 74
a7. Alt. 225 ft. Geologist's log.		
Sand, loose, coarse to very coarse, brown, dry, poorly sorted, quartz-rich, and fine gravel; some medium sand	7	7
Sand, fine to medium, well sorted, some coarse sand, loose	8	15
Sand, coarse, red-brown, well sorted, some very coarse sand and very fine gravel, moist at 20 ft	10	25
Sand, coarse, well sorted, some medium sand, becoming finer with depth, gravel lense from 57 to 60 ft	36	61
Till	5	66
Refusal		at 66
a8. Alt. 195 ft. Geologist's log.		
Sand, fine to very coarse, light brown, dry, poorly sorted, subangular and fine gravel, some subrounded gravel	3	3
Sand, medium well sorted; some fine to coarse sand	1	4
Sand, fine to very coarse, olive-brown, and fine gravel very hard drilling	2	6
a9. Alt. 195 ft. Geologist's log.		
Sand, fine to very coarse, light brown, dry, poorly sorted, subangular to subrounded, and fine gravel; extremely slow drilling	5	5
a10. Alt. 188 ft. Geologist's log.		
Sand, loose, medium, brown, dry, moderately sorted, subangular to subrounded, quartz-rich; some fine sand and fine gravel	5	5
Sand, very fine to very coarse brown, dry, poorly sorted, and fine gravel; some silt	6	11
Silt, stiff, and dry, gray clay	3	14
Sand, compact, very fine to very coarse, dry, and fine gravel; some silt	2	16
Silt and clay	4	20
Clay; water at 25 ft	10	30
Refusal		at 30
a11. Alt. 220 ft. Geologist's log.		
Gravel; water at 11 ft	21	21
Sand	9	30
Gravel	14	44
Refusal		at 44
Mass. Dept. Public Works Bridge Borings		
S29-1-7. Alt. 181.7 ft. Driller's log.		
Sand, loam	1.5	1.5
Sand	4.0	5.5
Sand and gravel	2.5	8.0
Sand	3.0	11.0
Sand, rock	2.0	13.0
Refusal		at 13.0
S29-5-2. Alt. 218.5 ft. Driller's log.		
Fill	6.5	6.5
Mud	3.5	10.0
Compact sand with gravel	6.0	16.0
Refusal		at 16.0

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

WESTFORD

U.S. Geological Survey Auger Borings

	Thickness	Depth
a1. Alt. about 205 ft. Geologist's log.		
Not reported	3	3
Sand, medium to very coarse, well rounded; some fine sand and gravel	4	7
Sand, medium, well sorted, rounded slightly mafic; minor gravel..	3	10
Sand, medium; intermittent gravel lenses; water at 11 ft.	4	14
Refusal on large boulder		at 14
a2. Alt. about 205 ft. Geologist's log.		
Gravel	3	3
Sand, medium, subrounded; some medium gravel and very fine to fine sand	2	5
Sand, medium, well sorted, subrounded to rounded, quartz-rich; some medium to coarse sand and fine gravel from 8 to 10 ft.; some mafic material...	5	10
Silt and very fine sand	1	11
Refusal		at 11
a3. Alt. about 205 ft. Geologist's log.		
Sand, loose, medium, dry, well sorted, subrounded; some fine gravel	5	5
Sand, very fine to medium, moist subangular; some coarse sand and fine gravel; some silt....	5	10
Till: wet, very fine sand with some angular gravel	1	11
Refusal		at 11
a4. Alt. about 205 ft. Geologist's log.		
Gravel, coarse, dry; some poorly sorted, angular, fine sand to medium gravel	7	7
Till: silt to fine gravel	2	9
Refusal		at 9
a5. Alt. about 205 ft. Geologist's log.		
Sand, fine to very coarse, brown, and fine gravel	6	6
Sand, coarse, slightly moist, well sorted, and fine gravel	2	8
Gravel, well sorted; some sand.	2	10
Refusal		at 10
a6. Alt. about 225 ft. Geologist's log.		
Silt and brown, very fine sand.	3	3
Sand, loose, very fine, light brown, dry, well sorted	7	10
Till: subangular, poorly sorted slightly moist, brown, fine sand to fine gravel	2	12
Refusal		at 12
a7. Alt. about 195 ft. Geologist's log.		
Not reported	7	7
Sand, loosely packed, very fine brown, slightly moist, and silt; intermittent gravel lenses; water at 10 ft.	18	25
Gravel, subangular; some sand..	8	33
Gravel, compact, well sorted, rounded	10	43
Refusal		at 43
a8. Alt. about 185 ft. Geologist's log.		
Sand, loosely packed, very fine brown, moist, well sorted, subangular to subrounded; intermittent gravel from 5 to 10 ft.; water at 8 ft.	10	10
Silt; some sand and gravel	5	15
Sand, loosely packed, fine to medium, subrounded, some fine and some coarse sands; gravel lense at approximately 19 ft.	10	25
Sand and gravel	11	36
Refusal		at 36

Mass. Dept. Public Works Bridge Borings

	Thickness	Depth
W26-18-13. Alt. 224.2 ft. Driller's log.		
Soft loam; water at surface	3.5	3.5
Medium to fine yellow sand, trace of gravel, coarse sand and silt, boulders, moist	8.0	11.5
Coarse to medium yellow sand; fine gravel, trace of fine sand, silt and mica flakes, boulders; wet	12.5	24.0
Compact fine to medium yellow sand, trace of coarse sand, silt, and mica flakes; moist.	3.5	27.5
Refusal		at 27.5
W26-22-19. Alt. 244.5 ft. Driller's log.		
Loam	1.0	1.0
Very fine gray sand and clay, trace of silt	1.5	2.5
Fine to medium yellow sand, fine gravel, trace of silt and clay	4.5	7.0
Soft gray sandy clay, trace of gravel	5.0	12.0

WORCESTER COUNTY

BERLIN

Mass. Dept. Public Works Bridge Borings

	Thickness	Depth
B9-2-3A. Alt. 245.9 ft. Driller's log.		
Loam, peaty; water at 2 ft.	2.5	2.5
Coarse yellow sand and gravel...	2.5	5.0
Fine gray sand and gravel	4.5	9.5
Fine yellow sand, gravel, boulders and little clay	3.5	13.0
Fine gray sand and little clay..	3.0	16.0
Gray sand, gravel and boulders..	17.0	33.0
Gray sand, gravel and boulders..	2.0	35.0
Refusal		at 35.0
B9-6-2. Alt. 210 ft. Driller's log.		
Fine loamy sand	7.5	7.5
Fine yellow sand and gravel	8.0	15.5
Coarse sand, little gravel, little clay	11.5	27.0
Fine yellow sand, little clay...	8.0	35.0
Hard blue sand and gravel, little clay	12.0	47.0
B9-12-2. Alt. 216.9 ft. Driller's log.		
Sand and gravel and boulders	9.5	9.5
Very fine gray sand with traces of clay	19.0	28.5
Hard fine sand and gravel with boulders	6.0	34.5
Refusal		at 34.5
B9-14-1. Alt. 490.2 ft. Driller's log.		
Medium yellow sand, gravel and boulders	6.0	6.0
Compact yellow sand, gravel and boulders	5.0	11.0
Refusal		at 11.0
B9-17-12. Alt. 362.1 ft. Driller's log.		
Fine sand, some gravel, dry, firm, brown	12.5	12.5
Fine sand, trace of fine gravel, moist firm brown	8.5	21.0
Refusal		at 21.0
B9-18-16. Alt. 341.4 ft. Driller's log.		
Peat, wet, very soft, black; water at 0.5 ft.	5.0	5.0
Fine sand, trace of gravel, moist, firm, brown	3.0	8.0
Fine sand, trace of inorganic silt, wet, loose, gray	6.0	14.0
Coarse sand, gravel, some stones, moist, hard, brown	5.5	19.5
Coarse sand, some gravel and stones, wet, hard, brown	5.0	24.5
Refusal		at 24.5
B9-19-101. Alt. 324.2 ft. Driller's log.		
Black, sandy peat and mud	4.4	4.4
Gray-brown fine sand	16.6	21.0
Brown fine to medium sand	5.5	26.5

Mass. Dept. Public Works Roadway Borings

I-495-5(11)42

	Thickness	Depth
78. Alt. 235.0 ft. Driller's log.		
Dark brown peat; water 0.3 ft. above ground level	3.0	3.0
Gray fine sand, little silt	4.0	7.0
Brown fine to medium sand, little silt, trace coarse sand	9.1	16.1
Refusal		at 16.1
82. Alt. 308.2 ft. Driller's log.		
Brown fine to coarse sand and gravel, trace of silt	4.0	4.0
Bedrock	8.0	12.0
No water encountered.		
84. Alt.294.7 ft. Driller's log.		
Brown fine to coarse sand, some fine to medium gravel, trace of coarse gravel; water at 3.7 ft.	5.0	5.0
Gray brown fine to coarse sand and fine to medium gravel, boulder fragments	5.0	10.0
89. Alt. 378.6 ft. Driller's log.		
Medium to fine red-brown sand, trace of silt	2.0	2.0
Coarse to fine gray-brown sand, trace of fine gravel and silt broke boulder at 5.0 ft.; water at 8.4 ft.	10.9	12.9
Bedrock	8.0	20.9
91. Alt. 371.3.ft. Driller's log.		
Medium to fine red-brown sand, trace of silt	2.0	2.0
Coarse to fine gray-brown sand, trace of fine gravel and silt; water at 6.3 ft.	12.2	14.2
Bedrock	8.0	22.2
96C. Alt. 359.0 ft. Driller's log.		
Gray-brown fine to coarse sand, fine to medium gravel, trace of silt; boulder at 8.4 ft...	9.4	9.4
Gray-brown fine to coarse sand, fine to medium gravel, trace of silt, some decomposed rock	4.6	14.0
Bedrock, no water encountered..	6.8	20.8
101. Alt. 324.2 ft. Driller's log.		
Black sandy peat and mud; water at 0.7 ft.	4.4	4.4
Gray brown fine sand	16.6	21.0
Brown, fine to medium sand	5.5	26.5
103. Alt. about 325 ft. Driller's log.		
Peat; water at surface	16.5	16.5
Silt, trace of peat, black	10.3	26.8
Black silt	2.4	29.2
Gray silt; fine brown sand	4.8	34.0
Medium to coarse brown sand, trace of gravel	3.0	37.0
104. Alt. 324.4 ft. Driller's log.		
Black peat; water at 0.3 ft.	5.0	5.0
Brown fine to coarse sand and fine gravel	16.5	21.5

I-495-5(9)45

	Thickness	Depth
2 DAM. Alt. 387.0 ft. Driller's log.		
Brown fine sand, some silt, little coarse to fine gravel.	2.0	2.0
Brown fine to medium sand, little silt and fine to coarse gravel	12.0	14.0
Refusal		at 14.0
3 DAM. Alt. 395 ft. Driller's log.		
Brown fine sand, some silt, trace of fine gravel	2.5	2.5
Gray-brown fine sand and silt, trace of fine to coarse gravel	19.5	22.0
Gray-brown fine sand and silt, some coarse to fine gravel...	3.0	25.0
2A. Alt. 382.1 ft. Driller's log.		
Brown silt, little fine sand...	5.0	5.0
Till, brown fine sand and silt, trace of fine to coarse gravel, cemented; no water encountered	8.0	13.0
6B. Alt. 396.0 ft. Driller's log.		
Brown fine sand, some silt, trace of coarse gravel	4.0	4.0
Brown fine to medium sand, little silt and coarse to fine sand	2.0	6.0
Refusal, no water encountered..		at 6.0

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

BERLIN (Continued)

Mass. Dept. Public Works Roadway Borings (Continued)

I-495-5(9)45 (Continued)

	Thickness	Depth
7. Alt. 435 ft. Driller's log.		
Brown fine sand and decomposed mica schist, little coarse gravel, trace of silt	5.0	5.0
Pink quartz to mica schist, very seamy, soft; water level at 7.0 ft	8.0	13.0
23. Alt. 430.6 ft. Driller's log.		
Brown fine sand, little silt	7.5	7.5
Gray-white mica schist, very seamy, medium-hard and fractured; water at 8 ft	7.7	15.2
42. Alt. 369.2 ft. Driller's log.		
Brown, loamy, fine sand	2.5	2.5
Brown fine to medium sand, boulders, trace of fine gravel and silt	13.5	16.0
No water encountered.		
56. Alt. 372.0 ft. Driller's log.		
Brown fine to medium sand, some fine to medium gravel, trace of silt	7.0	7.0
Gray mica-schist with quartz, very seamy--sand seams medium hard to soft to medium hard	10.0	17.0
No water encountered.		
64. Alt. about 342.2 ft. Driller's log.		
Organic peat; water at surface.	19.5	19.5
Gray fine to medium sand, some medium fine gravel, little silt	1.5	21.0
Brown fine to coarse sand, some medium to fine gravel, little silt	10.0	31.0
67. Alt. about 342.1 ft. Driller's log.		
Brown organic peat; water at surface	19.0	19.0
Gray fine to coarse sand, some coarse to fine gravel, little silt	3.0	22.0
Brown fine to coarse sand, coarse to fine gravel, trace of silt	8.0	30.0

Metropolitan District Commission Tunnel Borings

Wachusett-Marlborough Tunnel, Contract 283

	Thickness	Depth
2. Alt. 354.5 ft. Driller's log.		
Gray, coarse to fine sand and gravel, dry	7.0	7.0
Brown, coarse to fine sand, little gravel, dry	5.0	12.0
Brown, coarse to fine sand and gravel, dry	5.0	17.0
Brown, medium to fine sand, rock fragments	2.0	19.0
Bedrock	30.0	49.0
4. Alt. about 335 ft. Driller's log.		
Black silty fine sand	6	6
Brown coarse to fine sand	8	14
Bedrock	308	322
5. Alt.about 455 ft. Driller's log.		
Brown medium to fine sand, some gravel and silt, dense	10	10
Greenish, medium to fine sand, some gravel and silt, very dense	7.5	17.5
Bedrock	15.0	32.5
6. Alt. 425.0 ft. Driller's log.		
Brown fine sand, trace of gravel, very dense	8	8
Brown medium to fine sand, trace of gravel, decayed rock very dense	3	11
Bedrock	23.5	34.5
7. Alt. 363.0 ft. Driller's log.		
Black loam and grass	.8	.8
Bedrock; water at 3.0 ft	26.7	27.5
8. Alt. 365.0 ft. Driller's log.		
Brown, medium to fine sand and medium to fine gravel, very dense, moist	5.5	5.5
Brown fine sand and large boulders	13.5	19
Brown medium to fine sand and gravel, some gray rock fragments, very dense, moist	4.5	23.5
Gray medium to fine sand and gravel, some rock fragments, very dense, staggered boulders	27.0	40.5
Bedrock	299.5	340
9. Alt. 365 ft. Driller's log.		
Brown medium to fine sand, some gravel and silt, loose.	9	9
Bedrock	24	33
10. Alt. 281.0 ft. Driller's log.		
Black loam, peat	3	3
Medium to fine sand and gravel staggered boulders, very dense	12	15
Bedrock	30.5	45.5

BOLTON

U.S. Geological Survey Auger Borings

	Thickness	Depth
a1. Alt. about 251 ft. Geologist's log.		
Gravel, brown, dry, subangular some sand	5	5
Sand, compact, very fine to very coarse, poorly sorted, and fine gravel; water at 11.5 ft	30	35
Gravel, fine, well sorted, subrounded, and some coarse sand	2	37
Sand, medium to very coarse, well sorted, subrounded, very fine gravel	5	42
Till: predominantly sand	3	45
Refusal		at 45

Mass. Dept. Public Works Bridge Borings

	Thickness	Depth
B15-2-3C. Alt. 331.9 ft. Driller's log.		
Compact sand, gravel, and boulder fill	6.5	6.5
Soft, gray, peaty, silt	1.0	7.5
Coarse to very coarse gray sand, some fine gravel, trace of medium to fine sand	4.5	12.0
Compact fine to medium gray sand, some fine gravel, trace of coarse sand and silt	3..5	15.5
Coarse to medium yellow sand and gravel, trace of fine sand	4.5	20.0
Compact medium to coarse yellow sand, some gravel, trace of fine sand and silt, boulders	8.0	28.0
Loose medium to fine yellow sand, some fine gravel, trace of coarse sand and silt	4.5	32.5
Medium to fine yellow sand, some fine gravel and coarse sand, trace of silt, boulders	7.5	40.0
Refusal		at 40.0
B15-3-6. Alt. 352.4 ft. Driller's log.		
Sandy loam	1.0	1.0
Medium to fine micaceous yellow sand, trace of fine gravel and coarse sand, trace of silt	6.5	7.5
Fine to medium micaceous yellow sand, trace of fine gravel, coarse sand and silt	3.0	10.5
Loose fine to very fine yellow sand, trace of fine gravel and silt	4.5	15.0
Loose medium to coarse yellow sand, trace of fine sand	3.0	18.0
Compact medium to fine yellow sand, some coarse sand, trace of gravel, boulders	5.0	23.0
Compact medium to fine yellow sand, trace of gravel and coarse sand, boulders	4.5	27.5
Rock, gray phyllite, fractured.	5.0	32.5
B15-3-11. Alt. 347.2 ft. Driller's log.		
Sandy loam	1.0	1.0
Medium to fine yellow sand, some gravel and coarse sand, boulders	7.0	8.0
Compact medium to coarse yellow sand and gravel, trace of fine sand, boulders	15.0	23.0
Medium to fine micaceous yellow sand, some gravel and coarse sand	19.0	42.0
B15-4-12. Alt. 359.7 ft. Driller's log.		
Fine sand, some gravel, dry, firm, brown	3.0	3.0
Fine sand, some gravel and stones, dry, very hard, brown	4.5	7.5
Refusal		at 7.5
B15-5-3. Alt. 337.8 ft. Driller's log.		
Wet, loose swamp vegetation, peat	1.5	1.5
Wet, loose, gray, fine to coarse sand, little silt	16.5	18.0
Wet, medium dense, gray, medium to coarse sand, little fine sand, little silt, trace of fine to medium gravel, very dense	26.5	44.5
B15-6-2. Alt. 337.6 ft. Driller's log.		
Wet, soft, brown, organic peat	2.0	2.0
Wet, medium dense, gray, fine to coarse sand, some fine to coarse gravel and silt	2.0	4.0
Wet, dense, gray-brown fine sand, little silt	10.5	14.5
Wet, dense, brown, fine to coarse sand, little fine to coarse gravel and silt	8.5	23.0
Wet, medium dense, gray, fine sand, some silt	16.0	39.0
Moist, very dense, gray, coarse to fine gravel, some fine sand and silt	2.0	41.0
B15-7-111. Alt. 326.0 ft. Driller's log.		
Peat, some muck	40.0	40.0
Muck, some peat	3.0	43.0
Wet, gray, silt, some sand	4.0	47.0
Wet, fine, some coarse gray sand, some gravel	8.0	55.0
B15-8-37. Alt. 294.0 ft. Driller's log.		
Muck and peat	19.0	19.0
Wet, gray silt, sand and gravel	1.0	20.0
Moist, fine, trace of coarse brown sand	4.0	24.0
Wet, fine, trace of coarse brown sand	10.0	34.0

Mass. Dept. Public Works Roadway Borings

I-495-5(9)45

	Thickness	Depth
70. Alt. about 345 ft. Driller's log.		
Brown organic peat; water 0.5 ft. above lsd	33	33
Gray fine to coarse sand and medium to fine gravel, little silt	10	43
81. Alt. 342.0 ft. Driller's log.		
Brown organic peat; water at surface	12.5	12.5
Gray coarse to fine sand, some coarse to fine gravel, little silt	12.5	25.0
92. Alt. 342.6 ft. Driller's log.		
Brown organic peat; water 0.5 ft. above surface	10.0	10.0
Gray fine sand and silt, trace of fine gravel	1.5	11.5
Brown fine to medium sand, and little silt	8.5	20.0
96. Alt. 345.2 ft. Driller's log.		
Brown organic peat; water 1.0 ft. above surface	8.5	8.5
Gray fine to coarse sand, some coarse to fine gravel, little silt	7.5	16.0
Refusal		at 16.0

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
BOLTON (Continued)		
Mass. Dept. Public Works Roadway Borings (Continued)		
I-495-5(9)45 (Continued)		
102. Alt. 359.3 ft. Driller's log.		
Brown fine sand, little silt	4.0	4.0
Brown fine to medium sand, little fine to medium gravel, silt	5.0	9.0
Refusal		at 9.0
No water encountered.		
105. Alt. 338.7 ft. Driller's log.		
Brown organic peat; water 2.0 ft. above lsd.	3.0	3.0
Brown fine to medium sand, trace of silt	7.0	10.0
Brown fine to medium sand, trace of fine to medium gravel and silt	3.0	13.0
108. Alt. 337.8 ft. Driller's log.		
Swamp vegetation, peat; water 1.0 ft. above surface	1.5	1.5
Gray, fine to coarse sand, little silt	1.5	3.0
Gray silt, little fine sand	12.0	15.0
Gray fine to coarse sand, little silt	2.0	17.0
112. Alt. 362.4 ft. Driller's log.		
Vegetation, topsoil, 6 in. of brown fine sand, trace of silt and fine gravel	3.0	3.0
Brown fine to coarse sand, some fine to medium gravel, trace of silt	5.5	8.5
Gray-white mica schist, very seamy, fractured, medium hard	8.0	16.5
No water encountered.		
138. Alt. 390.7 ft. Driller's log.		
6 in. vegetation, topsoil, brown fine to medium sand	3.0	3.0
Fine to medium sand, some fine to medium gravel, trace of rock fragments	4.0	7.0
Gray mica schist, quartz medium hard, seamy; water at 8.0 ft.	8.0	15.0
143. Alt. 351.4 ft. Driller's log.		
Brown fine sand, some fine to medium gravel, trace of silt.	6.0	6.0
Refusal		at 6.0
No water encountered.		
I-495-5(10)48		
1. Alt. 373.9 ft. Driller's log.		
Fine brown sand, some silt	3.0	3.0
Boulder	2.0	5.0
Medium to hard gray rock	8.0	13.0
No water encountered.		
2. Alt. 333.1 ft. Driller's log.		
Loose brown sand, some silt, and boulders	8.0	8.0
Brown sand, some gravel	2.0	10.0
Refusal		at 10.0
No water encountered.		
11. Alt. 335.8 ft. Driller's log.		
Dark brown sand and gravel	4.0	4.0
Compact brown sand, gravel, and boulders	2.0	6.0
Refusal		at 6.0
No water encountered.		
41. Alt. 293.3 ft. Driller's log.		
Muck and peat	53.0	53.0
Wet fine gray and brown sand	4.0	57.0
Wet, fine to coarse brown sand, some gravel	9.0	66.0
46. Alt. 296.0 ft. Driller's log.		
Wet, brown sand, silt and gravel; water at 0.5 ft.	6.0	6.0
Refusal		at 6.0
102. Alt. 329.6 ft. Driller's log.		
Fine and coarse sand, some gravel	3.0	3.0
Compact brown sand, gravel, boulders	5.0	8.0
Refusal		at 8.0
No water encountered.		
108. Alt. 325.7 ft. Driller's log.		
Peat	27.0	27.0
Wet, loose, fine and coarse gray sand	3.0	30.0
Wet, fine and coarse, gray sand, trace of gravel	7.0	37.0
Wet, fine and coarse gray sand and some gravel	3.0	40.0
113. Alt. 326.8 ft. Driller's log.		
Peat, some muck; water at surface	40.0	40.0
Wet, coarse, some fine gray sand, some gravel	10.0	50.0
123. Alt. 329.2 ft. Driller's log.		
Peat	8.0	8.0
Very loose, wet, fine and coarse gray sand, some gravel	16.0	24.0
Wet, fine and coarse gray sand and gravel	4.0	28.0
127. Alt. 345.8 ft. Driller's log.		
Fine, dark brown sand and gravel	7.0	7.0
Fine, dark brown sand and gravel, some boulders	2.0	9.0
Refusal		at 9.0
No water encountered.		
131. Alt. 316.3 ft. Driller's log.		
Loose, fine brown sand, trace of silt and gravel	8.0	8.0
Fine, brown sand, some gravel.	6.0	14.0
Compact brown sand and gravel.	4.0	18.0
Refusal		at 18.0
133. Alt. 293.8 ft. Driller's log.		
Muck and peat; water at surface	25.0	25.0
Peat, some silt	4.0	29.0
Wet silt--some soft gray clay.	3.0	32.0
Wet, fine and coarse gray sand and some gravel	10.0	42.0
209. Alt. about 330 ft. Driller's log.		
Black silt, some sand; water at 0.5 ft.	2.0	2.0
Wet, fine and coarse brown sand and gravel	3.0	5.0
Wet, coarse, some fine brown sand	12.0	17.0
Wet, brown sand and gravel	9.0	26.0
CLINTON		
Metropolitan District Commission Tunnel Borings		
Wachusett-Marlborough Tunnel, Contract 283		
3. Alt. 355.0 ft. Driller's log.		
Brown, medium to fine sand; medium density, moist	17.0	17.0
Black, fine sand	2.0	19.0
Bedrock	30.0	49.0
HARVARD		
U.S. Geological Survey Auger Borings		
a1. Alt. about 235 ft. Geologist's log.		
Sand, brown, wet; silt; fine gravel	5	5
No sample: probably loose sand and gravel	24	29
Gravel, extremely well sorted.	3	32
Sand and gravel	2	34
Gravel, fine, blue-gray, well sorted; some sand	2	36
Refusal		at 36
Mass. Dept. Public Works Bridge Borings		
H9-20-7B. Alt. 256.3 ft. Driller's log.		
Sand, gravel, and boulders	4.5	4.5
Boulder	1.0	5.5
Medium yellow sand, gravel and boulders	3.5	9.0
Boulder	1.5	10.5
Medium yellow sand	1.0	11.5
Rock, fractured granite, gneiss, and Harvard schist	5.0	16.5
H9-21-5. Alt. 241.1 ft. Driller's log.		
Very soft dark brown to black silty peat	10.0	10.0
Loose medium to fine micaceous yellow-gray sand, trace of fine gravel	5.5	15.5
Coarse to very coarse yellow-gray sand and gravel, trace of medium to fine sand, boulders	7.5	23.0
Loose, coarse yellow sand and gravel, some medium to fine sand	5.0	28.0
Loose, very coarse to coarse gray sand and gravel, trace of medium to fine sand	6.0	34.0
Refusal		at 34.0
Mass. Dept. Public Works Roadway Borings		
I-495-5(10)48		
56. Alt. 320.5 ft. Driller's log.		
Silty brown sand	3.0	3.0
Compact brown sand, some gravel, and boulders	3.0	6.0
Refusal		at 6.0
No water encountered.		
80. Alt. 271.7 ft. Driller's log.		
Coarse brown sand, gravel	7.0	7.0
Fine brown sand, trace of silt and gravel; water at 11.0 ft	18.0	25.0
Compact brown sand and gravel.	1.0	26.0
Refusal		at 26.0
82. Alt. 272.2 ft. Driller's log.		
Fine brown sand, some silt	1.5	1.5
Brown sand and gravel	1.5	3.0
Brown sand, some gravel, and boulders	5.0	8.0
Refusal		at 8.0
No water encountered.		
86. Alt. 272.4 ft. Driller's log.		
Brown sand, silt, boulders	3.0	3.0
Compact brown sand, gravel, boulders	2.0	5.0
Refusal		at 5.0
No water encountered.		
161. Alt. 302.0 ft. Driller's log.		
Wet, fine brown sand, some silt, trace of gravel	2.0	2.0
Brown sand, some gravel, scattered boulders; water at 4.0 ft.	6.0	8.0
Refusal		at 8.0
167. Alt. 319.9 ft. Driller's log.		
Fine brown sand, some silt, scattered boulders	4.0	4.0
Fine brown sand, some gravel, scattered boulders	8.0	12.0
Compact fine brown sand, some clay, trace of gravel	15.0	27.0
Compact brown sand, some gravel and clay	3.0	30.0
No water encountered.		
175. Alt. 339.5 ft. Driller's log.		
Fine, brown sand, some silt, boulders	4.0	4.0
Brown sand, some gravel, and boulders	7.0	11.0
Boulders	2.0	13.0
Fine brown sand and clay, some gravel, scattered boulders	7.0	20.0
Boulder	1.0	21.0
Fine brown sand, some clay and gravel, scattered boulders	4.0	25.0
Boulder	1.0	26.0
Fine brown sand, some clay and gravel, scattered boulders	9.0	35.0
Bedrock	8.0	43.0
No water encountered.		
180. Alt. 309.3 ft. Driller's log.		
Fine brown sand some silt, boulders	3.0	3.0
Very compact brown sand, gravel and boulders	6.0	9.0
Bedrock	8.0	17.0
207. Alt. 241.3 ft. Driller's log.		
Peat, muck; water 1.0 ft above lsd.	4.0	4.0
Loose brown sand, some gravel	5.0	9.0
Fine, coarse brown sand, some gravel	9.0	18.0
Refusal		at 18.0

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
NORTHBOROUGH		
U.S. Geological Survey Auger Borings		
a1. Alt. about 305 ft. Geologist's log.		
Sand, loosely compacted, medium to very coarse, brown, dry, moderately sorted, subrounded quartz-rich, and fine gravel.	10	10
Sand, fine, moist; some medium sand to very fine gravel; water at 8.3 ft.............	7	17
Silt and fine sand; gravel lense at 24 ft..............	14	31
Refusal......................		at 31
a2. Alt. about 320 ft. Geologist's log.		
Sand, compact, very fine to very coarse, brown, dry, poorly sorted, subangular to subrounded, and fine gravel..	8	8
Refusal......................		at 8
a3. Alt. about 325 ft. Geologist's log.		
Fill.........................	5	5
Sand, medium to very coarse, brown, moist, poorly sorted, and gravel.................	10	15
Till: predominantly sand, some silt and some gravel; water at 15 ft....................	11	26
Refusal......................		at 26
a4. Alt. about 305 ft. Geologist's log.		
Sand, loosely compacted, fine to medium, light brown, dry, moderately sorted, subangular to subrounded; some fine sand and fine gravel.............	10	10
Sand, loosely compacted, medium to coarse, well sorted; minor fine to coarse gravel; sorting coefficient increases with depth; water at 32 ft...	45	55
Sand, fine to medium, well sorted; some gravel..........	15	70
Sand, fine to very fine, gray-green, well sorted..........	5	75
Till: silt and very fine sand with some gravel............	12	87
Refusal......................		at 87
a5. Alt. about 305 ft. Geologist's log.		
Fill.........................	5	5
Sand, loosely compacted, fine to very coarse, poorly sorted, fine gravel.................	5	10
Sand, medium to coarse, well sorted......................	5	15
Sand, loosely packed, fine to coarse, iron-red, poorly sorted; coarser with depth with intermittent gravel lenses; water at 25 ft.......	14	29
Till: predominantly medium sand, with some silt and coarse sand.................	2	31
a6. Alt. about 305 ft. Geologist's log.		
Gravel, compact, brown.........	2	2
Sand, loose, medium, dry, well sorted, subangular; some coarse sand and fine gravel; wet at 15 ft.................	33	35
Sand, fine to medium...........	10	45
Sand, very fine to fine........	8	53
Till: clay, silt, sand and some gravel......................	10	63
Refusal......................		at 63
Mass. Dept. Public Works Bridge Borings		
N20-1-4A. Alt 251.7 ft. Driller's log.		
Fill, sand, gravel, trace of brick, dry, loose brown......	5.0	5.0
Fine sand and gravel, wet, firm brown.......................	5.0	10.0
Fine sand, trace of gravel, wet loose brown.................	4.0	14.0
Fine sand, some gravel and stones, wet, very hard, gray.	6.0	20.0
Refusal......................		at 20.0
N20-4-4. Alt. 277.5 ft. Driller's log.		
Loam.........................	1.0	1.0
Sand and gravel..............	5.0	6.0
Wood; water at 7.6 ft.........	7.0	13.0
Fine sand....................	19.0	32.0
Sand and clay................	10.0	42.0
Clay and sand................	12.0	54.0
Sand and gravel..............	11.0	65.0
Sand, gravel, and clay........	13.0	78.0
Refusal......................		at 78.0
N20-17-1. Alt. 280.0 ft. Driller's log.		
Loose coarse dirty sand and gravel fill; water at 7.25 ft....................	15.7	15.7
Soft fine blue sand...........	4.1	19.8
Stiff coarse blue sand and gravel....................	12.2	32.0
Metropolitan District Commission Tunnel Borings		
Wachusett-Marlborough Tunnel, Contract 283		
11. Alt. 275 ft. Driller's log.		
Brown medium to fine sand, medium density.............	13.0	13.0
Brown medium to fine sand, dense......................	4.5	17.5
Brown medium to fine sand, some medium to fine gravel; dense......................	4.5	22
Medium to fine sand and gravel and rock fragments..........	7.5	29.5
Medium to coarse sand and gravel, staggered boulders, very dense.................	12.5	42.0
Bedrock......................	31.9	73.9
12. Alt. 255.0 ft. Driller's log.		
Gray medium to fine sand, medium density, wet.........	6.5	6.5
Gray fine sand...............	3.0	9.5
Brown fine sand, medium density, wet...............	3.0	12.5
Gray medium to fine sand and gravel, staggered boulders, very dense; moist..........	12.5	25
Bedrock......................	20.4	45.4
Shaft B. Alt. 299.8 ft. Driller's log.		
Black loam, staggered boulders brown fine sand, some rock fragments.................	4	4
Very dense gray coarse to fine sand and rock fragments, staggered boulders, very dense, moist...............	20	24
Bedrock......................	276.2	300.2
13. Alt. 241.0 ft. Driller's log.		
Organic peat.................	2.0	2.0
Brown and gray fine sand, medium density, moist.......	12.3	14.3
Boulder......................	6.6	20.9
Fine to medium sand..........	2.1	23
Bedrock......................	43.7	66.7
14. Alt. 225.0 ft. Driller's log.		
Black silty fine sand.........	2.5	2.5
Brown fine sand, little gravel dense, moist................	5.5	8
Gray medium to fine sand, little gravel...............	7	15
Brown silty fine sand, little gray fine sand.............	7	22
Brown medium to fine sand and some gravel, very dense.....	5.5	27.5
Gray medium to fine sand, little gravel and silt......	3.5	31
Bedrock......................	38	69
15. Alt. 228.0 ft. Driller's log.		
Coarse sand and gravel........	4	4
Medium sand and gravel........	4.5	8.5
Silt and coarse sand, non plastic....................	5	13.5
Silt and fine sand, trace of coarse sand................	41.6	55.1
Boulders, some gravel, little space between..............	18.3	73.4
Bedrock; water at 77.8 ft.....	27.4	100.8
15A. Alt. 243.0 ft. Driller's log.		
Gray silt and clay...........	8.0	8.0
Brown silt and sand..........	5.5	13.5
Gray silt....................	3.5	17.0
Silt and fine sand...........	30.0	47.0
Fine sand and silt...........	28.0	75.0
Sand, silt, and gravel........	9.8	84.8
Bedrock......................	30.8	115.6
15B. Alt. 262.0 ft. Driller's log.		
Fine brown sand and gravel....	8.5	8.5
Coarse sand..................	6.5	15
Gray fine sand and silt.......	57.5	72.5
Gravel, some silt............	7.5	80
Bedrock......................	28.5	105.8
16. Alt. 286.0 ft. Driller's log.		
Sand and gravel..............	15	15
Heavy gravel and cobbles......	31	46
Silt, sand, gravel, till......	51.2	97.2
Bedrock......................	26.1	123.3
17. Alt. 240.0 ft. Driller's log.		
Fine sand, trace of gravel, some silt..................	13.0	13.0
Fine brown sand, very dense...	9.0	22.0
Fine sand and silt...........	17.0	39.0
Fine sand and silt, trace of gravel.....................	22.8	61.8
Bedrock......................	23.2	85.0
18. Alt. 228 ft. Driller's log.		
Peat.........................	1.8	1.8
Brown medium to fine sand and medium to coarse gravel, staggered boulders..........	15.2	17
Gray brown medium to fine sand and gravel, staggered boulders..................	7	24
Bedrock......................	30	54
19. Alt. 223.0 ft. Driller's log.		
Brown fine sand and silt, trace of fine gravel........	6	6
Brown fine sand and silt......	35	41
Medium to fine sand, brown, trace of fine gravel, boulders..................	15	56
Bedrock......................	30	86
20. Alt. 225.0 ft. Driller's log.		
Brown coarse to fine sand, trace of fine gravel........	6	6
Continuous boulders, decayed rock.......................	18.4	24.4
Bedrock......................	30.0	54.4
21. Alt. 253.0 ft. Driller's log.		
Medium to fine sand, trace of silt.......................	17	17
Coarse to fine sand, trace of silt, dense................	11	28
Coarse to fine sand, trace of fine gravel, trace of silt..	3.8	31.8
Bedrock......................	70.4	102.2
22. Alt. 239 ft. Driller's log.		
Brown fine sand, some decayed vegetation.................	3.5	3.5
Brown fine sand, loose........	3.5	7
Gray fine sand...............	4	11
Gray fine sand, some silt, very dense.................	4	15
Gray fine sand, some silt and medium to fine gravel.......	2	17
Gray medium to fine sand and fine to coarse gravel.......	7	24
Bedrock......................	215	239
23. Alt. 243.0 ft. Driller's log.		
Swamp peat and loam...........	2	2
Gray clay and silt, trace of brown sand, trace of brown organic silt...............	5	7
Gray fine sand, trace of inorganic silt..............	6	13
Gray medium sand, trace of fine gravel, gradual change, gray medium sand...........	9	22
Boulders.....................	6.5	28.5
Bedrock......................	30.0	58.5

Table 5.--Logs of selected borings in the Assabet River basin, Massachusetts--Continued

	Thickness	Depth
WESTBOROUGH		
U.S. Geological Survey Auger Borings		
al. Alt. about 290 ft. Geologist's log.		
Sand, loosely packed, medium, brown, well sorted; some coarse sand; gravel from 9 to 14 ft. and 36 to 38 ft.; water at 10 ft.	55	55
Till: clay, silt, fine sand and some gravel	12	67
Mass. Dept. Public Works Bridge Borings		
W24-2-2. Alt. 271.47 ft. Driller's log.		
Mud	5.5	5.5
Loose fine blue sand	6.1	11.6
Loose coarse sand and gravel	2.4	14.0
Sharp fine blue sand	6.2	20.2
Firm fine gray sand and little clay	11.8	32.0
Hard coarse sand and coarse gravel	4.0	36.0
W24-7-6. Alt. 327.3 ft. Driller's log.		
Fill, dirty brown sand	4.0	4.0
Fill, fine brown sand, some gravel	6.0	10.0
Fill, gray-brown sand, some gravel	10.0	20.0
Fine gray-brown sand, some silt; water at 21.0 ft.	3.0	23.0
Fine gray sand, some fine gravel, trace of silt	7.0	30.0
W24-17-1. Alt. 285.4 ft. Driller's log.		
Coarse sand and boulders	6.5	6.5
River mud and fine sand	2.0	8.5
Coarse yellow sand and gravel.	5.5	14.0
W24-18-2. Alt. 334.3 ft. Driller's log.		
Sand, gravel, and boulders	7.5	7.5
Coarse sand and gravel	5.0	12.5
Compact sand, gravel, and boulders	7.0	19.5
Refusal		at 19.5

Table 6.--Chemical analyses of water from selected wells and one pond in the Assabet River basin, Massachusetts
(Analytical results in parts per million except as indicated)

Well no.	Date of collection	Temperature (°F)	Silica (SiO_2)	Total iron (Fe)	Total manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (Residue on evaporation at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
WELLS FINISHED IN ICE-CONTACT OR OUTWASH DEPOSITS																				
Acton 125[2/]	3- 7-58	-	-	0.03	0.00	-	-	-	-	-	-	4.0	-	0.35	-	34		-	6.1	2
137[2/]	5-23-58	-	-	.07	.00	-	-	-	-	-	-	5.4	-	.00	-	16		-	6.4	3
139[2/]	7-24-58	-	-	.25	-	-	-	-	-	-	-	3.6	-	.13	-	13		-	-	0
141[2/]	9-11-58	-	-	.04	.00	-	-	-	-	-	-	20	-	3.8	-	38		-	6.1	0
Bolton 13[1/]	4-12-63	44.5	6.3	.16	.02	4.2	1.3	1.8	0.4	12	6.5	2.1	0.0	1.7	32	16	6	48	6.2	2
Concord 106[2/]	-	-	-	.05	.00	-	-	-	-	-	-	3.5	-	.05	-	11		-	6.7	0
107[2/]	-	-	-	.12	.00	-	-	-	-	-	-	3.5	-	.05	-	16		-	7.0	0
Northborough 25[1/]	4-12-63	52	15	.10	.00	7.9	3.0	4.4	1.7	37	4.0	5.9	.1	1.2	62	32	2	88	7.2	2
33[1/]	4-12-63	53	13	.03	.00	6.6	1.4	17	2.2	22	17	12	.1	14	96	23	5	147	6.6	2
Stow 18[1/]	4-11-63	48	8.2	.12	.04	8.0	1.5	2.9	3.3	14	13	3.0	.1	12	64	26	15	93	5.8	2
87[3/]	11-27-56	-	-	.21	.0	-	-	-	-	-	-	-	-	-	-	29.1		-	6.23	-
89[3/]	-	-	-	2.4	.0	-	-	-	-	-	-	-	-	-	-	29.1		-	6.12	-
92[2/]	5-31-62	-	-	.01	.00	-	-	-	-	-	-	2.5	-	.00	-	12		-	6.4	5
95[2/]	7-12-62	-	-	.05	.00	-	-	-	-	-	-	7.0	-	.00	-	36		-	6.2	10
97[2/]	7-15-62	-	-	.15	.00	-	-	-	-	-	-	7.5	-	.00	-	28		-	6.0	10
98[2,4/]	7-17-62	-	-	.05	.00	-	-	-	-	-	-	4.0	-	.00	-	34		-	7.0	15
98[2,5/]	7-18-62	-	-	.60	.00	-	-	-	-	-	-	2.0	-	.00	-	38		-	6.5	25
Sudbury, White Pond[1/]	4-30-53	-	1.4	.33	.00	2.8	.7	2.7	.4	6	9.6	2.4	.0	.0	23	10	5	37.5	5.9	7
Westford 7[1/]	4-10-63	46.3	8.3	.05	.00	14	3.4	9.0	4.6	10	23	15	.1	30	120	49	41	174	5.8	2

Table 6.--Chemical analyses of water from selected wells and one pond in the Assabet River basin, Massachusetts--Continued

Well no.	Date of collection	Temperature (°F)	Silica (SiO_2)	Total iron (Fe)	Total manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (Residue on evaporation at 180°C)	Hardness as $CaCO_3$ Calcium, magnesium	Hardness as $CaCO_3$ Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
WELLS FINISHED IN TILL																				
Concord 100[1]	4-11-63	45	4.8	0.14	0.00	4.8	0.6	0.5	0.6	14	4.2	0.3	0.0	0.7	25	15	3	34	6.4	4
Harvard 58[1]	4-11-63	42	11	.07	.01	12	3.1	8.0	1.2	18	26	14	.1	1.7	94	43	28	146	7.0	2
Stow 7[1]	4-11-63	40.5	7.8	.03	.00	14	2.4	9.0	4.7	41	13	11	.0	11	97	45	12	157	6.5	2
WELL FINISHED IN SWAMP DEPOSITS																				
Stow 102[2]	7-25-62	-	-	3.8	.00	-	-	-	-	-	-	2.5	-	.00	-	22		-	6.3	40
WELLS FINISHED IN BEDROCK																				
Acton 34[3]	-	-	-	.10	-	-	-	-	-	-	-	-	-	.008	13.10	-	-	-	-	-
Berlin 35[1]	4-12-63	50.5	14	.09	.31	40	12	20	7.1	80	51	54	.0	9.4	267	150	64	435	6.7	2
Stow 16[1]	4-11-63	51.5	24	3.1	.14	7.8	3.5	7.9	2.2	44	15	2.2	.2	.1	.89	34	0	111	6.6	3
40[3]	-	-	-	2.7	-	-	-	-	-	-	2.0	2.0	-	-	-	6.2		-	6.9	-

[1] Analyses by U.S. Geological Survey.
[2] Analyses by Mass. Dept. Public Health.
[3] Analyses from other sources.
[4] Water sample collected at a depth of 57 ft.
[5] Water sample collected at a depth of 36 ft.

Table 7.-- Water levels in observation wells in the Assabet River basin, Massachusetts

(Depths in feet below land-surface datum except when preceded by a + indicating they are above land-surface datum. For description of wells, see table 2.)

BOLTON 26

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
June 27	5.6	Mar. 26	2.97	Dec. 26	5.21
Aug. 28	7.6	Apr. 26	4.92	1964	
Oct. 1	5.6	May 27	5.63	Feb. 6	4.27
22	5.04	July 2	6.87	Mar. 6	3.20
Nov. 23	3.82	Aug. 2	7.32	Apr. 3	2.48
Dec. 22	5.41	27	8.85	May 1	4.95
1963		Oct. 8	9.78	June 2	6.15
Jan. 22	4.59	31	10.44	July 6	7.26
Feb. 26	5.10	Dec. 6	4.30		

BOXBOROUGH 10

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
June 14	13.35	Apr. 26	11.38	Dec. 26	11.66
Aug. 28	16.85	May 27	12.17	1964	
Oct. 1	15.35	July 2	14.70	Feb. 6	11.12
28	11.34	Aug. 2	15.86	Mar. 6	10.87
1963		27	16.60	Apr. 3	9.56
Jan. 22	11.99	Oct. 8	16.70	May 1	11.45
Feb. 26	12.50	31	16.64	June 2	13.34
Mar. 26	10.08	Dec. 6	11.10	July 6	15.39

CARLISLE 41

Date	Water level	Date	Water level	Date	Water level
1963		1963		1963	
Jan. 22	3.32	July 2	8.68	Dec. 6	4.73
Feb. 27	4.2	Aug. 2	9.92	26	4.96
Mar. 26	.29	27	10.47	1964	
Apr. 26	3.06	Oct. 8	9.92	Feb. 6	3.81
May 27	4.34	31	10.17	Mar. 6	1.14

CONCORD 87

(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1961		1961		1962	
Sept. 19	13.12	Oct. 23	12.08	Jan. 26	9.42
20	13.14	24	12.08	27	9.31
21	12.75	25	12.07	28	9.32
22	12.73	26	12.07	29	9.32
23	12.72	27	12.08	30	9.28
24	12.71	28	12.09	31	9.31
25	12.67	29	12.09	Feb. 1	9.31
26	12.59	30	12.08	2	9.37
27	12.56	31	12.08	3	9.36
28	12.52	Nov. 1	12.09	4	9.37
29	12.49	2	12.14	5	9.31
30	12.47	3	12.17	6	9.31
Oct. 1	12.45	4	12.18	7	9.43
2	12.43	5	12.20	8	9.50
3	12.41	6	12.22	9	9.53
4	12.40	7	12.24	10	9.55
5	12.37	8	12.25	11	9.63
6	12.34	9	12.26	12	9.66
7	12.32	10	12.29	13	9.69
8	12.28	11	12.33	14	9.73
9	12.26	12	12.35	15	9.76
10	12.24	13	12.37	16	9.81
11	12.22	14	12.38	17	9.83
12	12.20	15	12.40	18	9.88
13	12.18	16	12.42	19	9.93
14	12.17	17	12.43	20	9.94
15	12.16	18	12.45	21	9.98
16	12.14	19	12.48	22	10.03
17	12.13	20	12.51	23	10.06
18	12.12	1962		24	10.10
19	12.10	Jan. 22	9.55	25	10.15
20	12.09	23	9.48	26	10.19
21	12.09	24	9.44	27	10.21
22	12.09	25	9.44	28	10.23

CONCORD 87--Continued

(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1962		1962		1962	
Mar. 1	10.22	May 8	8.60	July 15	10.88
2	10.26	9	8.60	16	10.92
3	10.27	10	8.64	17	10.96
4	10.30	11	8.68	18	11.00
5	10.35	12	8.71	19	11.03
6	10.34	13	8.74	20	11.07
7	10.35	14	8.76	21	11.11
8	10.41	15	8.79	22	11.14
9	10.43	16	8.83	23	11.17
10	10.42	17	8.86	24	11.20
11	10.36	18	8.89	25	11.24
12	10.21	19	8.92	26	11.28
13	9.93	20	8.95	27	11.31
14	9.72	21	8.98	28	11.35
15	9.43	22	9.06	29	11.39
16	9.20	23	9.10	30	11.43
17	9.11	24	9.13	31	11.46
18	9.10	25	9.16	Aug. 1	11.49
19	9.11	26	9.21	2	11.54
20	9.10	27	9.26	3	11.58
21	9.09	28	9.31	4	11.63
22	9.08	29	9.35	5	11.67
23	9.08	30	9.39	6	11.72
24	9.06	31	9.38	7	11.77
25	9.04	June 1	9.32	8	11.81
26	9.02	2	9.38	9	11.86
27	8.99	3	9.47	10	11.91
28	8.97	4	9.51	11	11.95
29	8.93	5	9.54	12	11.99
30	8.90	6	9.56	13	12.03
31	8.87	7	9.59	14	12.07
Apr. 1	8.66	8.	9.62	15	12.11
2	8.47	9	9.65	16	12.16
3	8.30	10	9.67	17	12.20
4	8.19	11	9.69	18	12.24
5	8.11	12	9.71	19	12.29
6	8.05	13	9.74	20	12.33
7	8.01	14	9.76	21	12.37
8	8.00	15	9.79	22	12.42
9	8.00	16	9.81	23	12.47
10	8.02	17	9.84	24	12.51
11	8.06	18	9.88	25	12.55
12	8.10	19	9.91	26	12.59
13	8.06	20	9.93	27	12.63
14	8.09	21	9.97	28	12.68
15	8.18	22	10.01	29	12.71
16	8.21	23	10.03	30	12.75
17	8.25	24	10.07	31	12.79
18	8.24	25	10.10	Sept. 1	12.82
19	8.25	26	10.14	2	12.86
20	8.29	27	10.19	3	12.90
21	8.31	28	10.23	4	12.94
22	8.31	29	10.26	5	12.97
23	8.32	30	10.30	6	13.00
24	8.39	July 1	10.34	7	13.04
25	8.40	2	10.39	8	13.07
26	8.48	3	10.43	9	13.10
27	8.50	4	10.47	10	13.14
28	8.54	5	10.51	11	13.17
29	8.58	6	10.55	12	13.21
30	8.62	7	10.59	13	13.25
May 1	8.65	8	10.64	14	13.29
2	8.68	9	10.67	15	13.32
3	8.67	10	10.70	16	13.36
4	8.64	11	10.73	17	13.40
5	8.60	12	10.77	18	13.43
6	8.56	13	10.80	19	13.45
7	8.57	14	10.84	20	13.48

Table 7.--Water levels in observation wells in the Assabet River basin, Massachusetts--Continued

CONCORD 87--Continued
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1962		1962		1963	
Sept. 21	13.52	Dec. 1	8.86	Feb. 9	10.32
22	13.56	2	8.89	10	10.36
23	13.59	3	8.92	11	10.39
24	13.62	4	8.95	12	10.41
25	13.65	5	8.97	13	10.42
26	13.67	6	8.83	14	10.47
27	13.71	7	8.78	15	10.49
28	13.62	8	8.71	16	10.54
29	13.60	9	8.62	17	10.59
30	13.60	10	8.58	18	10.62
Oct. 1	13.59	11	8.54	19	10.63
2	13.59	12	8.50	20	10.63
3	13.59	13	8.47	21	10.65
4	13.59	14	8.46	22	10.72
5	13.60	15	8.48	23	10.75
6	12.21	16	8.48	24	10.79
7	11.29	17	8.50	26	10.88
8	10.58	18	8.56	27	10.89
9	10.11	19	8.62	28	10.93
10	9.80	20	8.66	Mar. 1	10.97
11	9.59	21	8.79	2	10.98
12	9.43	22	8.73	3	11.03
13	9.32	23	8.84	4	11.07
14	9.24	24	8.91	5	11.09
15	9.17	25	8.97	6	11.07
16	9.11	26	8.97	7	11.04
17	9.08	27	9.05	8	11.01
18	9.07	28	9.07	9	11.01
19	9.05	29	9.12	10	10.98
20	9.03	30	9.13	11	11.01
21	9.02	31	9.16	12	10.99
22	9.06	1963		13	11.01
23	9.06	Jan. 1	9.22	14	10.96
24	9.08	2	9.27	15	10.83
25	9.15	3	9.32	16	10.68
26	9.15	4	9.36	17	10.45
27	9.19	5	9.40	18	10.30
28	9.25	6	9.44	19	10.15
29	9.26	7	9.48	20	10.14
30	9.32	8	9.52	21	10.19
31	9.33	9	9.55	22	10.11
Nov. 1	9.35	10	9.60	23	10.09
2	9.40	11	9.54	24	9.91
3	9.34	12	9.45	25	9.68
4	9.34	13	9.52	26	9.57
5	9.33	14	9.64	27	9.53
6	9.32	15	9.71	28	9.48
7	9.28	16	9.75	29	9.43
8	9.27	17	9.78	30	9.39
9	9.26	18	9.82	31	9.38
10	9.12	19	9.86	Apr. 1	9.35
11	9.12	20	9.67	2	9.33
12	9.08	21	9.66	3	9.30
13	9.03	22	9.68	4	9.27
14	8.99	23	9.77	5	9.26
15	8.96	24	9.77	6	9.23
16	8.94	25	9.79	7	9.21
17	8.93	26	9.90	8	9.19
18	8.92	27	9.87	9	9.17
19	8.93	28	9.94	10	9.17
20	8.93	29	10.01	11	9.16
21	8.92	30	10.03	12	9.17
22	8.90	31	10.05	13	9.17
23	8.95	Feb. 1	10.10	14	9.18
24	8.94	2	10.13	15	9.20
25	8.92	3	10.14	16	9.23
26	8.90	4	10.21	17	9.26
27	8.88	5	10.22	18	9.25
28	8.87	6	10.23	19	9.30
29	8.86	7	10.25	20	9.29
30	8.86	8	10.28	21	9.35

CONCORD 87--Continued
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1963		1963		1963	
Apr. 22	9.36	June 26	11.11	Aug. 21	13.35
23	9.40	27	11.15	22	13.40
24	9.40	28	11.19	23	13.44
25	9.47	29	11.21	24	13.48
26	9.50	30	11.24	25	13.52
27	9.52	July 1	11.28	26	13.57
28	9.55	2	11.31	27	13.61
29	9.58	3	11.34	28	13.65
30	9.58	4	11.37	29	13.69
May 1	9.58	5	11.41	30	13.72
2	9.63	6	11.46	31	13.75
3	9.66	7	11.50	Sept. 1	13.79
4	9.68	8	11.54	2	13.83
5	9.70	9	11.58	3	13.86
6	9.73	10	11.63	4	13.89
7	9.75	11	11.67	6	14.01
8	9.76	12	11.72	7	14.03
9	9.78	13	11.77	8	14.06
10	9.81	14	11.81	9	14.09
11	9.83	15	11.85	10	14.12
12	9.87	16	11.90	11	14.15
13	9.89	17	11.94	12	14.18
14	9.90	18	11.97	13	14.21
15	9.92	19	12.00	14	14.24
16	9.95	20	12.04	15	14.27
17	9.97	21	12.07	16	14.30
18	9.99	22	12.12	17	14.32
19	10.00	23	12.15	18	14.35
20	10.03	24	12.19	19	14.37
21	10.05	25	12.23	20	14.40
22	10.06	26	12.27	21	14.43
23	10.08	27	12.31	22	14.45
24	10.11	28	12.34	23	14.48
25	10.13	29	12.38	24	14.51
26	10.15	30	12.43	25	14.53
27	10.17	31	12.47	26	14.55
28	10.18	Aug. 1	12.51	27	14.57
29	10.20	2	12.53	28	14.60
June 7	10.49	3	12.56	29	14.62
8	10.51	4	12.60	Oct. 3	14.59
9	10.53	5	12.64	4	14.63
10	10.57	6	12.69	5	14.66
11	10.60	7	12.73	6	14.68
12	10.63	8	12.77	7	14.70
13	10.66	9	12.82	8	14.71
14	10.70	10	12.86	Nov. 2	14.98
15	10.73	11	12.92	3	15.00
16	10.76	12	12.96	4	15.02
17	10.80	13	13.00	5	15.03
18	10.84	14	13.04	6	15.04
19	10.88	15	13.09	7	14.82
20	10.91	16	13.13	8	14.20
21	10.92	17	13.18	9	13.80
22	10.96	18	13.22	10	13.53
23	11.00	19	13.27	11	13.36
24	11.05	20	13.31	12	13.22
25	11.08				

HARVARD 55

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
July 13	8.10	Mar. 26	6.09	Dec. 26	7.55
Aug. 28	8.5	Apr. 26	7.25	1964	
Oct. 1	7.9	May 27	7.59	Feb. 6	7.07
22	7.2	July 2	8.08	Mar. 6	6.66
Nov. 23	7.05	Aug. 2	8.64	Apr. 3	6.32
Dec. 22	7.35	27	8.70	May 1	7.16
1963		Oct. 8	8.39	June 2	7.38
Jan. 22	7.23	31	8.32	July 6	8.39
Feb. 26	7.68	Dec. 6	7.32		

Table 7.--Water levels in observation wells in the Assabet River basin, Massachusetts--Continued

HARVARD 59

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
Aug. 28	33.3	Apr. 26	27.65	Dec. 26	28.80
Oct. 1	32.8	May 27	29.80	1964	
22	27.29	July 2	31.75	Feb. 6	26.22
Nov. 23	26.67	Aug. 2	32.81	Mar. 6	26.57
Dec. 22	26.93	27	34.24	Apr. 3	24.81
1963		Oct. 8	34.41	May 1	26.61
Jan. 22	29.72	31	34.57	June 2	30.18
Feb. 26	30.24	Dec. 6	29.61	July 6	32.42
Mar. 26	25.20				

HUDSON 91

Date	Water level	Date	Water level	Date	Water level
1961		1963		1963	
Nov. 22	5.15	Jan. 22	3.89	Oct. 31	9.10
1962		Mar. 26	2.04	Dec. 6	5.17
Oct. 22	4.08	Apr. 26	4.21	26	5.66
Nov. 23	3.32	May 26	4.98	1964	
Dec. 22	4.07	Aug. 27	6.64	Feb. 6	4.52
		Oct. 8	8.29	Mar. 6	3.98

MAYNARD 41
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1961		1961		1962	
Sept. 19	.57	Dec. 20	.04	Feb. 5	.04
20	.53	21	.04	6	.04
21	+.13	22	.04	7	.04
22	+.03	23	.05	8	.05
23	.02	24	.08	9	.07
24	.03	25	.09	10	.06
25	.01	26	.09	11	.05
26	+.01	27	.06	12	.05
27	.02	28	.03	13	.05
28	.03	29	.03	14	.06
29	.04	30	.04	15	.06
30	.09	31	.04	16	.05
Oct. 1	.14	1962		17	.05
2	.20	Jan. 1	.05	18	.05
3	.15	2	.05	19	.05
19	.13	3	.05	20	.05
20	.16	4	.05	21	.05
21	.17	5	.07	22	.05
22	.17	6	+.01	23	.05
23	.17	7	+.01	24	.05
24	.19	8	.01	25	.05
25	.22	9	.02	26	.04
26	.23	10	.03	27	.04
27	.23	11	.03	28	.04
28	.24	12	.04	Mar. 1	.04
29	.24	13	.04	2	.04
30	.24	14	.05	3	.04
31	.24	15	+.01	4	.04
Nov. 1	.25	16	+.01	5	.04
2	.26	17	.02	6	.04
3	.26	18	.03	7	.04
4	.26	19	.04	8	.04
5	.25	20	.04	9	.04
6	.17	21	.05	10	.04
7	.03	22	.04	11	.04
8	.04	23	.04	12	.03
9	.04	24	.04	13	.02
10	.05	25	.04	14	.02
11	.07	26	.03	15	.02
12	.10	27	.03	16	.02
13	.11	28	.03	17	.02
14	.05	29	.04	18	.02
15	.05	30	.05	19	.02
16	.05	31	.05	20	.02
17	.04	Feb. 1	.05	21	.02
18	.05	2	.07	22	.02
19	.05	3	.10	23	.02
20	.07	4	.06	24	.02

MAYNARD 41--Continued
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1962		1962		1962	
Mar. 25	0.02	June 4	0.03	Aug. 14	0.37
26	.02	5	.02	15	.42
27	.02	6	.00	16	.49
28	.02	7	.01	17	.31
29	.02	8	.03	18	.04
30	.03	9	.03	19	.08
31	.03	10	.04	20	.27
Apr. 1	+.16	11	.05	21	.29
2	+.01	12	.03	22	.29
3	.02	13	.03	23	.27
4	.02	14	.03	24	.34
5	.03	15	.04	25	.39
6	.03	16	.05	26	.44
7	.03	17	.08	27	.49
8	.03	18	.14	28	.44
9	.03	19	.15	29	.03
10	.03	20	.16	30	.03
11	.03	21	.16	31	.05
12	.03	22	.14	Sept. 1	.19
13	.02	23	.21	2	.27
14	.03	24	.11	3	.31
15	.03	25	.05	4	.35
16	.02	26	.12	5	.38
17	.03	27	.06	6	.33
18	.03	28	.13	7	.38
19	.03	29	.22	8	.43
20	.03	30	.26	9	.48
21	.03	July 1	.30	10	.52
22	.03	2	.33	11	.57
23	.03	3	.35	12	.66
24	.04	4	.38	13	.70
25	.04	5	.41	14	.74
26	.04	6	.42	15	.67
27	.04	7	.44	16	.77
28	.04	8	.47	17	.77
29	.03	9	.23	18	.04
30	.02	10	.15	19	.07
May 1	.02	11	.28	20	.24
2	.02	12	.37	21	.33
3	.00	13	.38	22	.40
4	.01	14	.42	23	.44
5	.02	15	.43	24	.44
6	.03	16	.38	25	.47
7	.03	17	.35	26	.37
8	.03	18	.35	27	+.02
9	.03	19	.34	28	+.05
10	.04	20	.44	29	.02
11	.04	21	.49	30	.03
12	.04	22	.44	Oct. 1	.04
13	.04	23	.33	2	.05
14	.04	24	.20	3	.10
15	.04	25	.20	4	.16
16	.04	26	.32	5	+.11
17	.04	27	.30	6	+.35
18	.04	28	.35	7	+.35
19	.02	29	.43	8	+.27
20	.03	30	.47	23	.05
21	.03	31	.51	24	.05
22	.04	Aug. 1	.46	25	.05
23	.04	2	.51	26	.04
24	.03	3	.59	27	.04
25	.03	4	.65	28	.04
26	.04	5	.71	29	.04
27	.04	6	.74	30	.04
28	.05	7	.77	31	.03
29	.05	8	.52	Nov. 1	.02
30	.07	9	.37	2	.03
31	+.05	10	.30	3	.02
June 1	+.03	11	.23	4	.02
2	.01	12	.23	5	.03
3	.03	13	.33	6	.03

Table 7.--Water levels in observation wells in the Assabet River basin, Massachusetts--Continued

MAYNARD 41--Continued
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
Nov. 7	0.04	Feb. 5	0.05	May 23	0.04
8	.04	6	.05	24	.04
9	.04	7	.05	25	.05
10	.00	8	.05	26	.07
11	.01	9	.05	27	.09
12	.02	10	.05	28	.11
13	.03	11	.05	29	.12
14	.03	12	.05	30	.07
15	.03	13	.05	31	.08
16	.03	14	.05	June 1	.12
17	.03	15	.05	2	.17
18	.03	16	.05	3	.21
19	.03	17	.05	7	.07
20	.03	18	.06	8	.07
21	.03	19	.06	9	.17
22	.00	20	.06	10	.18
23	.01	21	.05	11	.16
24	.02	22	.05	12	.14
25	.03	27	.04	13	.14
26	.03	28	.05	14	.20
27	.03	Mar. 1	.05	15	.15
28	.03	2	.05	16	.14
29	.03	3	.04	17	.18
30	.04	4	.04	18	.25
Dec. 21	.05	5	.04	19	.32
22	.05	6	+.21	20	.34
23	.05	7	.02	21	.29
24	.05	8	.03	22	.35
25	.05	9	.02	23	.35
26	.05	10	.03	24	.38
27	.05	11	.03	25	.42
28	.05	12	.02	26	.46
29	.05	13	.01	27	.51
30	.05	14	.01	28	.57
31	.05	15	.02	29	.44
1963		16	.02	30	.25
Jan. 1	.05	17	.02	July 1	.24
2	.06	18	.01	2	.25
3	.06	19	.01	3	.25
4	.06	20	.02	4	.31
5	.06	21	.02	5	.34
6	.06	22	.01	6	.32
7	.06	23	.02	7	.31
8	.06	24	.01	8	.25
9	.06	25	+.02	13	.38
10	.06	26	+.06	14	.38
11	.04	27	.00	15	.38
12	.04	28	.03	16	.38
13	.05	29	.03	17	.38
14	.05	May 1	.03	18	.38
15	.05	2	.03	19	.38
16	.05	3	.03	20	.37
17	.05	4	.03	21	.37
18	.06	5	.03	22	.37
19	.06	6	.03	23	.37
20	.04	7	.04	24	.37
21	.04	8	.04	25	.43
22	.05	9	.04	26	.45
23	.04	10	.04	27	.53
24	.04	11	.04	28	.61
25	.05	12	.04	29	.66
26	.05	13	.04	30	.87
27	.05	14	.04	31	.87
28	.05	15	.04	Aug. 1	.92
29	.05	16	.04	2	.94
30	.05	17	.04	3	.94
31	.05	18	.04	4	.94
Feb. 1	.05	19	.04	5	.94
2	.05	20	.04	6	.94
3	.05	21	.04	7	.94
4	.05	22	.04	8	.94

MAYNARD 41--Continued
(Daily high water levels from recorder graph)

Date	Water level	Date	Water level	Date	Water level
1963		1963		1963	
Aug. 9	0.94	Nov. 9	0.11	Nov. 21	0.12
10	.94	10	.11	22	.12
11	.94	11	.11	23	.11
12	.94	12	.11	24	.11
13	.94	13	.11	25	.11
Nov. 1	.22	14	.11	26	.11
2	.22	15	.11	27	.11
3	.22	16	.11	28	.11
4	.22	17	.11	29	.11
5	.22	18	.11	30	.08
6	.24	19	.11	Dec. 1	.12
7	.15	20	.11	2	.13
8	.15				

NORTHBOROUGH 38

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
Aug. 20	9.8	Mar. 26	3.34	Dec. 6	6.12
28	10.2	Apr. 26	4.81	1964	
Oct. 1	10.7	May 27	5.21	Feb. 6	4.78
22	5.65	July 2	6.74	Mar. 6	3.94
Nov. 23	4.66	Aug. 2	9.55	Apr. 3	3.21
Dec. 22	4.97	27	12.05	May 1	4.86
1963		Oct. 8	13.27	June 2	6.10
Jan. 22	4.73	31	12.95	July 6	8.66
Feb. 26	4.96				

NORTHBOROUGH 47

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
Aug. 23	15.6	Mar. 26	14.00	Dec. 6	13.69
Oct. 1	16.3	Apr. 26	13.25	26	13.20
22	13.17	May 27	13.54	1964	
Nov. 23	12.97	July 2	14.19	Feb. 6	13.08
Dec. 22	12.96	Aug. 2	14.92	Mar. 6	13.27
1963		27	15.52	Apr. 3	12.03
Jan. 22	13.52	Oct. 8	16.19	May 1	12.87
Feb. 26	14.22	31	16.35	June 2	13.57

NORTHBOROUGH 50

Date	Water level	Date	Water level	Date	Water level
1962		1963		1964	
Aug. 23	dry	May 27	5.57	Feb. 6	1.87
Oct. 1	15.0	July 2	10.24	Mar. 6	1.75
22	5.82	Aug. 2	13.41	Apr. 3	1.11
Dec. 22	3.22	27	15.24	May 1	2.94
1963		Oct. 8	dry	June 2	6.60
Jan. 22	4.33	31	dry	July 6	11.11
Mar. 26	1.23	Dec. 6	6.48		
Apr. 26	3.03	26	5.11		

NORTHBOROUGH 54

Date	Water level	Date	Water level	Date	Water level
1962		1963		1964	
Aug. 24	15.0	Mar. 26	5.66	Feb. 6	8.26
Oct. 1	14.8	Apr. 26	10.66	Mar. 6	7.12
22	9.30	May 27	11.59	Apr. 3	5.98
Nov. 23	8.67	Aug. 27	15.06	May 1	9.17
Dec. 22	9.48	Oct. 8	16.00	June 2	12.19
1963		31	15.97	July 6	13.68
Jan. 22	10.05	Dec. 6	7.82		
Feb. 26	10.70	26	9.81		

Table 7.--Water levels in observation wells in the Assabet River basin, Massachusetts--Continued

NORTHBOROUGH 55

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
Aug. 24	14.86	Apr. 26	9.32	Dec. 26	10.61
Oct. 1	15.36	May 27	10.62	1964	
22	11.04	July 2	12.70	Feb. 6	8.70
Nov. 23	9.47	Aug. 2	14.16	Mar. 6	9.81
Dec. 22	8.93	27	15.09	Apr. 3	6.97
1963		Oct. 8	15.96	May 1	8.45
Jan. 22	11.02	31	15.77	June 2	11.37
Feb. 26	11.57	Dec. 6	11.98	July 6	13.19
Mar. 26	7.53				

STOW 11

Date	Water level	Date	Water level	Date	Water level
1962		1963		1963	
June 6	2.30	Mar. 26	1.48	Dec. 6	3.15
Aug. 28	4.84	Apr. 26	3.03	26	3.57
Oct. 1	3.80	May 27	3.56	1964	
22	3.11	July 2	4.33	Feb. 6	2.88
Nov. 23	2.44	Aug. 2	4.81	Mar. 6	2.15
Dec. 22	2.23	27	5.10	Apr. 3	1.06
1963		Oct. 8	4.72	May 1	3.09
Jan. 22	2.92	31	4.56	June 2	3.97
Feb. 26	3.60			July 6	4.46

WESTFORD 7

Date	Water level	Date	Water level	Date	Water level
1963		1963		1963	
Jan. 22	14.46	July 2	dry	Dec. 6	15.63
Feb. 27	14.93	Aug. 2	dry	26	15.11
Mar. 26	14.28	27	dry	1964	
Apr. 26	14.34	Oct. 8	dry	Feb. 6	14.78
May 27	14.77	31	17.00	Mar. 6	14.57

WESTFORD 16

Date	Water level	Date	Water level	Date	Water level
1963		1963		1963	
Jan. 22	6.55	July 2	6.38	Dec. 6	6.67
Feb. 27	7.22	Aug. 2	7.91	26	7.14
Mar. 26	5.70	27	9.01	1964	
Apr. 26	6.88	Oct. 8	10.92	Feb. 6	6.67
May 27	7.36	31	11.21	Mar. 6	5.73

Table 8.--Particle-size distribution in samples of unconsolidated deposits from the Assabet River basin, Massachusetts

(In percent)

		CLAY SIZES	SILT SIZES	SAND SIZES mm					GRAVEL SIZES mm			
* Sample number	Geologic unit	mm <.004	mm .004-.0625	Very fine .0625-.125	Fine .125-.25	Medium .25-.5	Coarse .5-1.0	Very coarse 1.0-2.0	Very fine 2-4	Fine 4-8	Medium 8-16	Coarse 16-32
63MAS1	Till	4.6	4.7	1.7	2.4	4.4	7.8	11.3	13.0	20.0	17.2	12.9
63MAS8	do.	23.0	27.9	8.2	9.0	7.4	6.1	5.0	3.3	3.3	4.7	2.1
63MAS2	Ice-contact deposits	1.2	39.0	16.2	21.8	16.0	4.2	1.6	-	-	-	-
63MAS3	do.	1.4	41.2	15.0	21.0	16.2	4.4	.8	-	-	-	-
63MAS4	do.	1.4	42.4	17.0	17.6	13.2	6.2	2.2	-	-	-	-
63MAS5	do.	1.2		4.8	42.4	45.1	4.6	1.4	.3	.2	-	-
63MAS6	do.	3.6		15.2	54.6	26.0	.6	-	-	-	-	-
63MAS7	do.	1.2		2.9	31.3	49.0	9.1	4.9	1.1	.5	-	-
63MAS9	do.	1.4	31.6	41.2	24.8	.8	.2	-	-	-	-	-
63MAS10	do.	3.3	16.3	38.4	36.0	6.0	-	-	-	-	-	-
63MAS11	do.	-	-	-	-	-	-	-	-	-	-	-

* See table 9 for location

Table 9.--Physical and hydrologic properties of samples of unconsolidated deposits from the Assabet River basin, Massachusetts

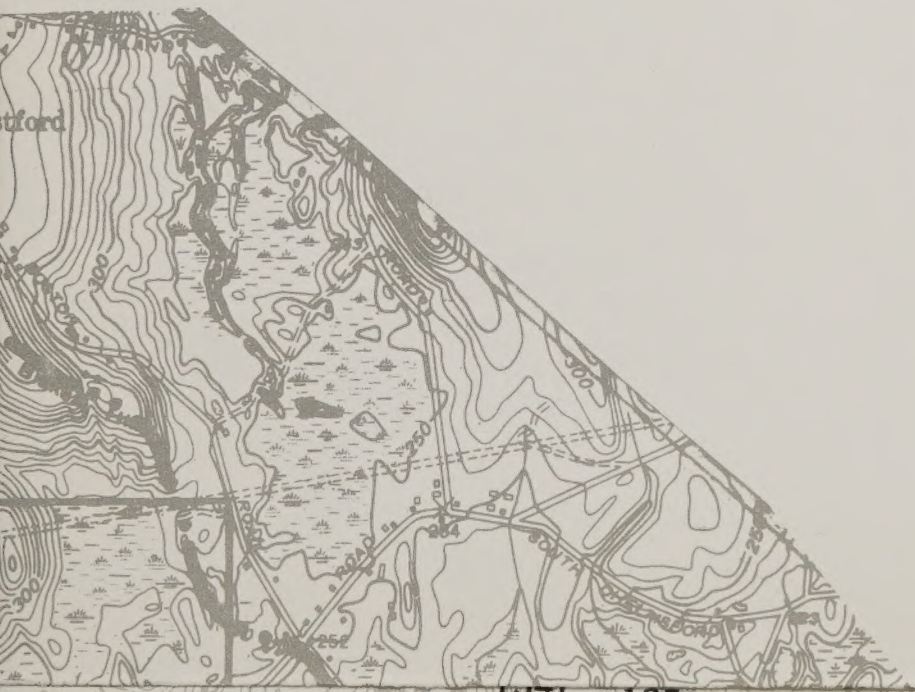
Sample number	Town	Location	Depth (ft.)	Specific gravity of solids	Dry unit weight (g per cc)	Centrifuge moisture equivalent (percent)	Total porosity (percent)	Specific yield (percent)	Coefficient of permeability (gpd per sq ft)
63MAS1 1/	Westford	423551N0712613.1	4-5	2.75	1.95	7.7	29.1	10.8	47.0
63MAS2 1/	do.	423551N0712613.1	3-4	2.69	1.80	2.1	33.1	25.8	9
63MAS3 2/	do.	423551N0712613.1	3-4	2.69	1.64	2.1	39.0	32.4	17
63MAS4 3/	do.	423551N0712613.1	3-4	2.68	1.68	2.3	37.3	30.1	14
63MAS5 1/	Acton	422634N0712558.1	3-4	2.70	1.63	.6	39.6	37.0	290
63MAS6 2/	do.	422634N0712558.1	3-4	2.69	1.47	1.0	45.4	41.9	430
63MAS7 3/	do.	422634N0712558.1	3-4	2.70	1.51	.8	44.1	41.1	900
63MAS8 1/	Maynard	422556N0712754.1	5-6	2.75	1.64	19.1	40.4	9.7	.1
63MAS9 1/	Westborough	421558N0713927.1	6-7	2.74	1.57	2.0	42.7	36.6	21
63MAS10 2/	do.	421558N0713927.1	6-7	2.75	1.46	1.7	46.9	41.8	64
63MAS11 3/	do.	421558N0713927.1	-	-	-	-	-	-	69

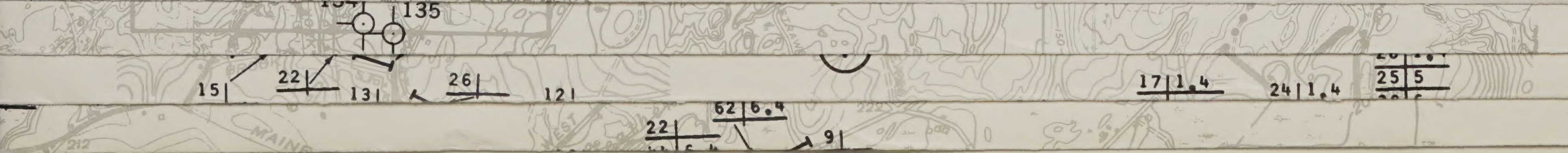
1/ Sample collected in disturbed state.

2/ Sample collected in undisturbed state, orientation perpendicular to bedding.

3/ Sample collected in undisturbed state, orientation parallel to bedding.

MASSACHUSETTS BASIC-DATA REPORT NO. 8
GROUND-WATER SERIES
PLATE 1





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MASSACHUSETTS BASIC-DATA REPORT NO. 8
GROUND-WATER SERIES
PLATE 1

ASSABET RIVER BASIN, MASSACHUSETTS
WELLS (INCLUDING TEST WELLS), BORINGS, MATERIALS SAMPLING SITES AND SEISMIC DATA

UNFOLD TO

SECTION 2 FOR: BASE MAP EXPLANATION; ACTON, BOXBOROUGH, CARLISLE, CONCORD, LITTLETON, AND WESTFORD.

SECTION 3 FOR: ACTON, BOLTON, BOXBOROUGH, CLINTON, CONCORD, HARVARD, MAYNARD, STOW, AND SUDBURY.

SECTION 4 FOR: SEISMIC DATA EXPLANATION; BERLIN, BOYLSTON, HUDSON, MARLBOROUGH, AND NORTHBOROUGH.

SECTION 5 FOR: GRAFTON, SHREWSBURY, AND WESTBOROUGH.

EXPLANATION

45 ⊙ WELL

o3 ◊ BORING

Well or boring penetrating only unconsolidated deposits. Symbol half filled in indicates that bedrock or refusal was reached. Symbol completely filled in indicates bedrock was penetrated. Numbers explained in text.

WATER LEVEL, HYDRAULIC DATA

AQUIFER KNOWN — WATER ANALYSIS — LOG

Additional information, available in text, is indicated by orientation of tick marks.

1-3 ⊠

MATERIALS SAMPLING SITE.

NUMBERS EXPLAINED IN TEXT.

Outline of seismic outsert; number refers to outserts in lower right portion of plate.

BASIN BOUNDARY

I-495-5(11)42

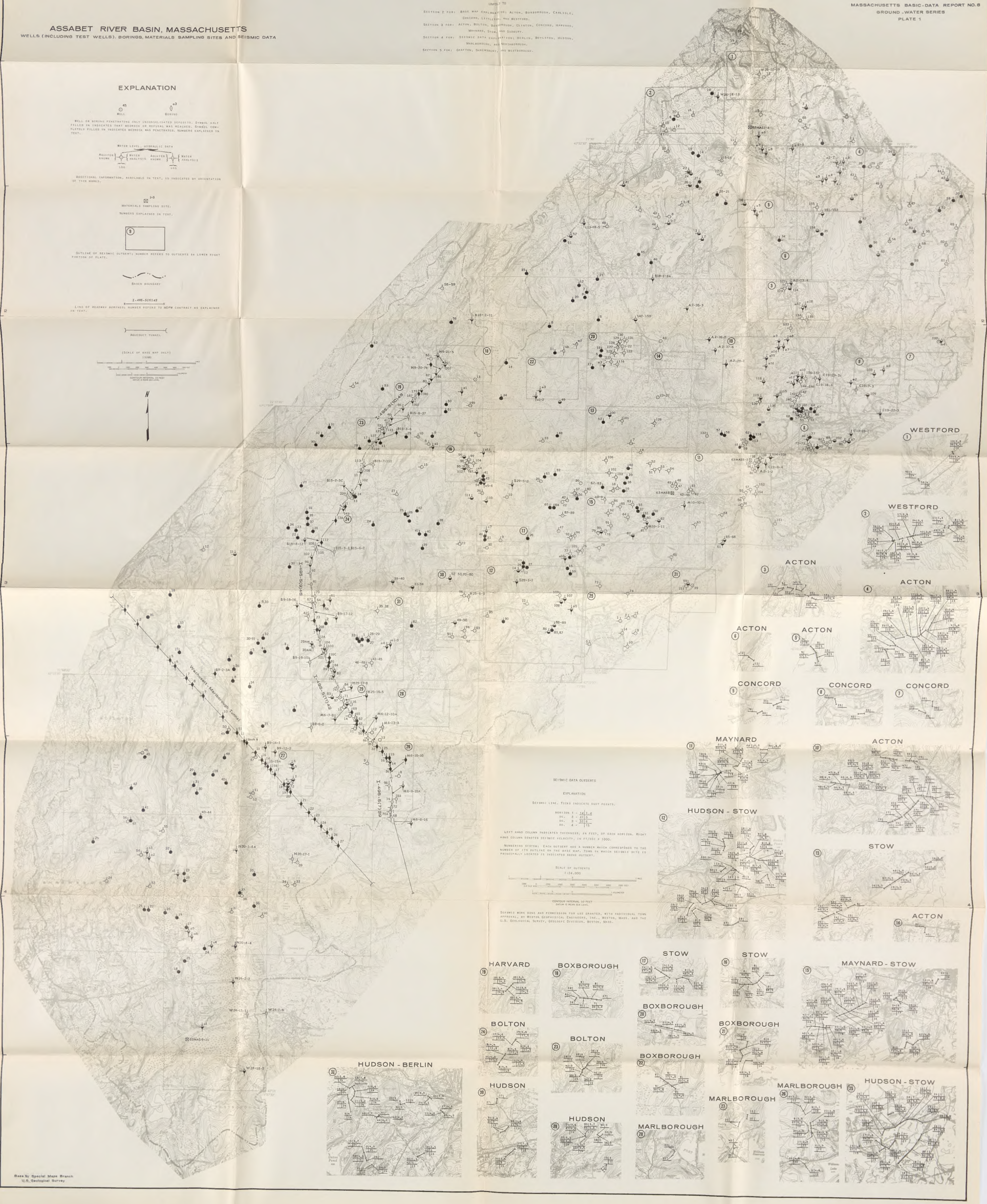
Line of roadway borings; number refers to MDPW contract as explained in text.

AQUEDUCT TUNNEL

(SCALE OF BASE MAP ONLY)
1:31,680

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

N



SEISMIC DATA OUTSERTS

EXPLANATION

Seismic line. Ticks indicate shot points.

HORIZON 1 - 14 | 1.4
DO. 2 - 41 | 5
DO. 3 - 32 | 6
DO. 4 - | 15

Left hand column indicates thickness, in feet, of each horizon. Right hand column denotes seismic velocity, in ft/sec x 1000.

Numbering system: Each outsert has a number which corresponds to the number of its outline on the base map. Town in which seismic site is principally located is indicated above outsert.

SCALE OF OUTSERTS
1:24,000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Seismic work done and permission for use granted, with individual town approval, by Weston Geophysical Engineers, Inc., Weston, Mass. and the U.S. Geological Survey, Geologic Division, Boston, Mass.

Base by Special Maps Branch
U.S. Geological Survey

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